

Agency Through Adaptation: Explaining The Rockefeller and Gates
Foundation's Influence in the Governance of Global Health and
Agricultural Development

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

The central argument that I advance in this dissertation is that the influence of the Rockefeller Foundation (RF) and the Bill and Melinda Gates Foundation (BMGF) in the governance of global health and agricultural development has been derived from their ability to advance knowledge structures crafted to accommodate the preferences of the dominant states operating within the contexts where they have sought to catalyze change. Consequently, this dissertation provides a new way of conceptualizing knowledge power broadly conceived as well as private governance as it relates to the provision of public goods.

In the first half of the twentieth-century, RF funds drove scientific research that produced tangible solutions, such as vaccines and high-yielding seed varieties, to longstanding problems undermining the health and wealth of developing countries emerging from the clutches of colonialism. At the country-level, the Foundation provided advanced training to a generation of agricultural scientists and health practitioners, and RF expertise was also pivotal to the creation of specialized International Organizations (IOs) for health (e.g. the League of Nations Health Organization) and agriculture (e.g. the Consultative Group on International Agricultural Research) as well as many informal international networks of experts working to solve common problems. Finally in the neo-liberal era, RF effectively demonstrated how the public-private partnership paradigm could provide public goods in the face of externally imposed austerity constraining public sector capacity and the failure of the free-market to meet the needs of populations with limited purchasing power.

Since its inception, the BMGF has demonstrated a similar commitment to underwriting innovation through science oriented towards reducing global health disparities and increasing agricultural productivity in poor countries, and has greatly expanded the application of the Public-Private Partnership (PPP) approach in both health and agriculture. Unlike its intellectual forebear, BMGF has been far more focused on end-points and silver bullets than investing directly in the training of human resources. Moreover whereas RF has for most of its history decentralized its staff, those of BMGF have been concentrated mainly at its headquarters in Seattle. With no operational programs of its own, BMGF has instead relied heavily on external consultants to inform its programs and remains dependent on intermediary organizations to implement its grants.

Despite these and other differences, both RF and BMGF have exhibited a common capacity to catalyze institutional innovation that has benefited historically marginalized populations in the absence of structural changes to the dominant global power structure. A preference for compromise over contestation, coupled with a capacity for enabling innovation in science and governance, has resulted in broad acceptance for RF and BMGF knowledge structures within both state and international policy arenas. This acceptance has translated into both Foundations having direct influence over (i) how major challenges related to disease and agriculture facing the global south are understood (i.e. the determinants and viable solutions); (ii) what types of knowledge matters for solving said problems (i.e. who leads); and (iii) how collective action focused on addressing these problems is structured (i.e. the institutional frameworks).

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List of Abbreviations

| | |
|--------|--|
| AATF | African Agricultural Technology Foundation |
| AGRA | Alliance for a Green Revolution in Africa |
| AHBFI | Africa Harvest Biotech Foundation International |
| AMC | Advance Market Commitment |
| APED | Action Program on Essential Drugs (WHO) |
| BMGF | Bill and Melinda Gates Foundation |
| CEO | Chief Executive Officer |
| CDC | Centers for Disease Control and Prevention (United States) |
| CFC | Chlorofluorocarbons |
| CGIAR | Consultative Group on International Agricultural Research |
| CIAT | International Centre for Tropical Agriculture |
| CIMMYT | International Centre for the Improvement of Corn and Wheat |
| CMB | China Medical Board |
| CSO | Civil Society Organization |
| CVI | Children's Vaccine Initiative |
| DDT | Dichlorodiphenyltrichloroethane |
| DFID | Department for International Development (United Kingdom) |
| DSP | Department of Public Health (Mexico) |
| FAO | Food and Agricultural Organization of the United Nations |
| FDA | Food and Drug Administration (United States) |
| FF | Ford Foundation |
| GAFSP | Global Agriculture and Food Security Program |
| GAVI | Global Alliance for Vaccines and Immunization |
| GCGH | Grand Challenges for Global Health |
| GE | Genetic Engineering |
| GEB | General Education Board |
| GHP | Global Health Partnership |
| GSK | GlaxoSmithKline |
| GURT | Genetic Use Restriction Technologies |
| HYV | High Yielding Varieties |
| IAASTD | International Assessment of Agricultural Knowledge Science, and Technology for Development |
| IANPHI | International Association of Public Health Institutes |
| IARC | International Agricultural Research Centre |
| IAP | Indian Agricultural Program |
| IAVI | International AIDS Vaccine Initiative |
| IFAD | International Fund for Agricultural Development |
| IFPRI | International Food Policy Research Institute |
| IGA | Informal Global Alliance |
| IHC | International Health Commission |
| IHD | International Health Division |
| IHME | Institute for Health Metrics and Evaluation |
| IITA | Institute of Tropical Agriculture |
| INCLIN | International Clinical Epidemiology Network |
| IP | Intellectual Property |

| | |
|--------|---|
| IPR | Intellectual Property |
| IPRB | International Program on Rice Biotechnology |
| IO | International Organization |
| IR | International Relations |
| IRRI | International Rice Research Institute |
| JDR | John Davison Rockefeller Sr. |
| LN | League of Nations |
| LNHO | League of Nations Health Organization |
| MAP | Mexican Agricultural Program |
| MDGs | Millennium Development Goals |
| MDP | Mectizan Donation Program (Merck) |
| MEP | Malaria Eradication Program (WHO) |
| MMV | Medicines for Malaria Venture |
| MNC | Multinational Corporation |
| MVP | Meningitis Vaccine Project |
| NDC | Non-Communicable Disease |
| NGO | Non-Governmental Organization |
| NIH | National Institutes of Health (United States) |
| OIHP | Office International D'hygiene Publique |
| ODA | Overseas Development Aid |
| OECD | Organization for Economic Co-operation and Development |
| OSS | Office of Special Studies |
| P4P | Purchase for Progress |
| PAHO | Pan American Health Organization |
| PASB | Pan American Sanitary Bureau |
| PATH | Program for Appropriate Technologies in Health |
| PC | Population Council |
| PDP | Product Development Partnership |
| PEPFAR | Presidents Emergency Plan for AIDS Relief (United States) |
| PHC | Primary Health Care |
| PIACT | Program for the Introduction and Adaptation of Contraceptive Technology |
| PIPRA | The Public Intellectual Property Resource for Agriculture |
| PPP | Public-Private Partnership |
| rDNA | Recombinant DNA |
| RF | Rockefeller Foundation |
| RIMR | Rockefeller Institute for Medical Research |
| RSC | Rockefeller Sanitary Commission |
| SEI | Science Enabled Innovation |
| TAC | Technical Advisory Committee (CGIAR) |
| TB | Tuberculosis |
| TFCS | Task Force for Child Survival |
| TRIPS | Agreement on Trade-Related Aspects of Intellectual Property Rights |
| UN | United Nations |
| UNDP | United Nations Development Program |
| UNICEF | United Nations International Children's Emergency Fund |
| US | United States |
| USAID | United States Agency for International Development |

| | |
|------|---------------------------|
| WFC | World Food Council |
| WFP | World Food Programme |
| WHO | World Health Organization |
| WTO | World Trade Organization |
| WWII | World War II |

Preface

Variations of the main argument of this dissertation and supporting empirical evidence have been presented publicly via three conference presentations and one co-authored journal article.

I presented a version of chapter five entitled “The Rockefeller Revolution: Establishing a Template for Philanthropic Power in the Governance of Global Food Security” at both the 2011 ISA annual convention in Montreal, QC, and the 2011 Canadian Political Science Association Annual Conference, Waterloo, ON.

I also presented the central argument of the dissertation supported by material taken from chapters four and six at the 2013 ISA annual convention in San Francisco in a paper entitled “Agency Through Adaptation: Explaining the Rockefeller and Gates Foundations’ Influence in Global Governance via the Public-Private Partnership Paradigm.”

Finally, a paper co-authored with Michael Moran, (“Illumination and Innovation: What Philanthropic Foundations Bring to Global Health Governance, *Global Society*, 27(2), 2013: 117-137) contained empirical evidence from chapters four and six, and variations of several arguments made in the dissertation. The most notable of these are that critical perspectives comprise the majority of historical studies on RF’s influence in world affairs, and that RF and BMGF have been innovators in global governance through their creation of governance mechanisms that have worked to fill public and private sector gaps.

Chapter 1: Introduction

1.1 Knowledge Construction as a Gateway to Power in Global Governance

Historically and continuing today, private foundations have played key roles in attempts to fill gaps created by public and private sectors within the United States. This phenomenon is both a reflection of and an adaptation to the longstanding distrust of “big” government and commitment to free markets embedded in the American psyche. While certainly not limited to the United States, private philanthropic foundations are very much a product of the American polity.

Ideas advanced by two particular private American philanthropic foundations, the Rockefeller Foundation (RF) and the Bill and Melinda Gates Foundation (BMGF) have featured prominently in collective-action focused on improving health and reducing hunger across the global South. This chapter articulates why RF and BMGF are worthy of an in-depth comparison and how their common willingness to accommodate state expressed preferences within geographic and temporal contexts where they have sought to catalyze change in pursuit of their larger goal of providing public goods to vulnerable populations is at the root of the influence in the governance of global public health and agricultural development. Their agency, I argue, provides a new way of conceptualizing both knowledge power and private governance as it relates to the production and provision of public goods.

While RF and BMGF are but two of the approximately 60,000 private-grant making foundations currently registered under section 501c(3) of the United States Internal Revenue Code, RF and BMGF distinguish themselves by the fact that the vast majority of private American foundations limit the focus of their efforts to domestic issues and draw from endowments of less than US\$10 million. RF and BMGF in contrast are the only American foundations with endowments of over US\$1 billion that work on both global health and agricultural development issues.¹

1 Foundation Center, *International Grantmaking Update: A Snapshot of US Foundations Trends* (New York: Foundation Center, 2010), 1-8. Accessed August 17, 2011.
http://Foundationcenter.org/gainknowledge/research/pdf/intl_update_2010.pdf

While established in very different temporal contexts, RF and BMGF were both born out of the vision of individual entrepreneurs and the culture of American capitalism, and both have devoted significant portions of their resources to strengthen public health and agricultural systems in developing countries. RF was the first American foundation that took its domestic role (and all the potential benefits and shortcomings that came with it), and applied it to areas of the world where its leadership felt there was a need. Yet RF, now a century old, has largely dismantled its once vast agricultural program and appears to be reducing the scope of its public health initiatives as well. BMGF in contrast was only established in 1994 but has since become the largest philanthropic organization in the world and the single largest private donor to global health and agricultural development initiatives. Since its inception, however, BMGF has sought to emulate RF, both in terms of the issues on which it has chosen to focus and the strategies it has relied on to bring about change.

This dissertation provides an explanation of how RF and BMGF have achieved influence in domestic, international and global policy making arenas regarding how public health and agricultural challenges should be conceptualized and overcome over time. Consequently the dissertation examines the ability of the two foundations to shape the actions and means adopted by individual states, the inter-state system, and global to society as whole, to organize itself in collective action focused on agricultural development and the promotion and protection of population health, including the delivery of collective solutions in pursuit of common goals.² Both foundations, I argue, have displayed an ability to create and advance knowledge structures for understanding and responding to public health and agricultural challenges that have served as roadmaps for collective action. The central argument that I advance in this dissertation is that the influence of RF and BMGF in the governance of global health and agricultural development has been derived from their ability to advance knowledge structures crafted to accommodate the preferences of the dominant states operating within the contexts where they have sought to catalyze change.

From the first decade of the twentieth-century to the present, Rockefeller money has been illuminating how science-enabled innovation can help overcome longstanding challenges

² Richard Dodgson, Kelly Lee, and Nick Drager, *Global Health Governance: a Conceptual Review* (Geneva: WHO, 2002), 6, Accessed May 11, 2009. http://whqlibdoc.who.int/publications/2002/a85727_eng.pdf

perceived to be jeopardizing health and food security and constraining economic development across the global South. In the context of the immediate post-colonial era, RF funds drove scientific research that produced tangible solutions, such as vaccines and high-yielding seed varieties, to longstanding problems. Moreover, it also led the construction of new institutions across the global South that trained a cadre of national leaders in the domains of public health and agriculture. For these reasons, the Foundation was accepted by such states as a modernizing force.

Moreover, capitalizing on the rise in state support for international cooperation, RF expertise was pivotal to the creation of specialized International Organizations (IOs) for health (e.g. the League of Nations Health Organization(LNHO)) and agriculture (e.g. the Consultative Group on International Agricultural Research) and the spread of international networks of experts working to solve common problems. Finally, in response to the spread of neo-liberalism, RF demonstrated how the Public-Private Partnership (PPP) paradigm could provide public goods in the face of externally imposed austerity constraining public sector capacity and the failure of the free-market to meet the needs of populations with limited purchasing power. Since its inception, BMGF has greatly expanded the application of the PPP approach in both health and agriculture.

Consequently, the agency of RF and BMGF in the governance of global health and agricultural development is rooted in their capacity to anticipate and adapt to changes in the distribution of global political and economic power. The Foundations' agency illustrates that one way for global governance schemes to be institutionalized and ultimately inform collective action is to work with, as opposed to contest, power asymmetries in the world order, so as not to risk losing the support of those with the capacity to undermine their effectiveness. As will be demonstrated in the empirical sections, both RF and BMGF have exhibited a common capacity to catalyse institutional innovation that has benefited historically marginalized populations in the absence of structural changes to the dominant global power structure.

A preference for compromise over contestation, coupled with a capacity for enabling innovation in science and governance, has resulted in broad acceptance for RF and BMGF

knowledge structures within both state and international policy arenas. This acceptance has translated into the Foundations having direct influence over (i) how major challenges related to disease and agriculture facing the global south are understood (i.e. the determinants and viable solutions); (ii) what types of knowledge matters for solving said problems (i.e. which “experts” are most suited to lead); and (iii) how collective action focused on addressing these problems is structured (i.e. the institutional frameworks).

The two foundations’ influence in the governance of global health and agricultural development lends support to the assertions of critical constructivists that elites play a privileged role in the process of knowledge construction.³ Nevertheless the willingness of the two foundations to accommodate the expressed preferences of the most powerful states and firms within the contexts they have sought to catalyze change does not mean that the contents of their knowledge structures were intended to reinforce the many structural inequities stemming from the unequal global distribution of power. Instead, this dissertation demonstrates that their approaches to collective action have been purposefully adapted to externally imposed constraints and opportunities created by state expressed preferences within geographic and temporal contexts where they have sought to catalyze change. As transnational actors of influence, they have attained legitimacy by enabling the development of strategies and institutional frameworks devised by their own staff and/or the communities of experts they support, which have proven capable of providing public goods to vulnerable populations in developing countries when public sector authorities mandated to fill this role have been unable to do so.

1.2 New perspectives on public-private cooperation and knowledge power

The dissertation begins by briefly examining debate concerning the utility of philanthropic foundations in the context of American society. This examination is followed by a review of

³ Martha Finnemore and Kathryn Sikkink, “Taking Stock: The Constructivist Research Program in International Relations and Comparative Politics,” *Annual Review of Political Science* 4 (2001): 391–416.

what has been written to date on the subject of RF and BMGF influence over efforts to strengthen public health and agricultural systems in developing countries.

I show how the RF's influence over international policy related to public health and agricultural development was largely ignored by mainstream twentieth century International Relations (IR) scholars. Nevertheless, a diverse group of historians, sociologists, political scientists and public health scholars have contributed to the rich body of literature in existence chronicling RF's many contributions to the theory and practice of international development. Typically, however, these works have been restricted in scope to particular activities (e.g. RF's role in agricultural development) and geographical spaces (e.g. Mexico) and time (e.g. the immediate post-colonial period). Such specificity is critical for providing detail for the historical record. However, it does not lend itself to developing a broader understanding of the capacity in which the RF has excelled as an agent of change, how this has been accomplished, and why its agency has been important for the governance of collective action.

Over the last decade, however, three factors have culminated in a dramatic increase in IR theorists' interest in the agency of private foundations in world politics, two of which relate to important disciplinary shifts occurring within IR itself.

First and most significant for this study, there is increased diversity of views of how power is distributed in the world order and what this means for solving complex global challenges. This is evidenced by the broad embrace of global governance as both a multi-theoretic perspective on the distribution of authority within the world order and a functional approach to how global collective goods problems are most effectively and fairly addressed.⁴ Global governance as a perspective has emerged to address three critical shortcomings of IR theory: IR's increasing inability to explain (i) the apparent decrease in effectiveness on the part of states and the interstate system to address critical challenges created by globalization,⁵ (ii) the dramatic increase of power (and sometimes authority) being wielded by non-state actors in

⁴ Klaus Dingwerth and Philip Pattberg, "Global Governance as a Perspective on World Politics," *Global Governance* 12, no. 2 (2006): 185-203.

⁵ Alice Ba and Matthew Hoffmann, eds., *Contending Perspectives on Global Governance* (New York: Routledge, 2005).

the governance of domains long associated exclusively with the state;⁶ and (iii) the competing normative agendas shaping the world order (i.e. the ideational realm).⁷ Global governance theorists thus view authority as having both structural and ideational aspects to it.

Second, as evidenced by the broad embrace of constructivism as an approach by many scholars, increased attention is being paid to the origins and significance of ideas and norms shaping collective action.

Third, led by BMGF, a new generation of private American philanthropic foundations has emerged to focus on creating solutions for longstanding health and development challenges, which has elicited both praise and concern, thereby raising interest in their work as a topic of scholarly inquiry.

To date, the overwhelming majority of the scholarship that has sought to illuminate the influence of either RF or BMGF in the governance of global health and agricultural development has been undertaken by individuals employing theoretical lenses that can be classified broadly as being either liberal or critical in orientation.

Through the liberal lens, RF and BMGF have been portrayed in a predominately positive light. Liberals tend to see the Foundations as semi-autonomous entities that have strategically used their wealth to promote universal ideals, strengthen international institutions, and foster innovation.⁸ Their utility in the governance of global health and agricultural development has centered around public sector capacity building, providing support for both innovation in science and technology and inter-state cooperation,⁹ and more recently, bridging gaps created by states and markets adversely impacting the world

⁶ Michael Barnett and Robert Duvall, "Power in International Politics," *International Organization* 59, no. 1 (2005): 39-75.

⁷ John G. Ruggie, *Constructing the World Polity: Essays on International Institutionalization* (New York: Routledge, 1998).

⁸ See for example Peter Bell, "The Ford Foundation as a Transnational Actor," *International Organization* 25 (June 1971): 465-478.

⁹ See for example John Farley, *To Cast Out Disease: A History of the International Health Division of the Rockefeller Foundation (1913-1951)* (Oxford; New York: Oxford University Press, 2004); Arthur A. Goldsmith, "The Rockefeller Foundation Indian Agricultural Program: Why it Worked," in *Western Philanthropy and Cultural Context: Western Philanthropy in South, East and Southeast Asia in the 20th Century*, eds., Soma Hewa and Philo Hove (Lanham: University Press of America, 1997), 85-114.

poor.¹⁰ In their capacity as “honest brokers,” liberals see RF and BMGF working to facilitate cooperation between public, private and third sectors in pursuit of creating viable solutions to complex challenges driving disease and hunger and inhibiting economic growth across the global South.¹¹ At the same time, with no formal rule-making authority, the Foundations must convince states of the merit of their ideas in order to see them institutionalized.

Critical perspectives—which account for the majority of historical and contemporary analyses—tend to view the foundations as conservative extensions of the transnational elite,¹² seeking to reinforce the dominant liberal economic model via their health and agricultural development initiatives.¹³ Critical scholars have emphasized the inherent contradictions of the Foundations’ focus on reducing global disparities given the source of the endowments, and their affiliations with the same firms and states that have been the engineers and proponents of structural inequality in international institutions such as the World Trade Organization.¹⁴

Concerns expressed over RF’s historical influence in collective action range from its perceived bias for bringing technology-centred strategies to bear on problems that often have deep socio-political determinants,¹⁵ to facilitating the blurring of private and public roles and responsibilities in global governance.¹⁶ Contemporary critical global governance scholars, by contrast, focus primarily on BMGF. Even more than its intellectual ancestor, BMGF is viewed as a purveyor of (i) scientific determinism (i.e. expanding the biomedical

¹⁰ See for example William Muraskin, *The Politics of International Health: The Children’s Vaccine Initiative and the Struggle to Develop Vaccines for the Third World* (Albany: State University of New York Press, 1998); Robert Herdt, “People, Institutions, and Technology: A Personal View of the Role of Foundations in International Agricultural Research and Development 1960–2010,” *Food Policy* 37 (2012): 179–190.

¹¹ See for example Michael Moran, “Philanthropic Foundations and Global Health Partnership Formation: The Rockefeller Foundation and IAVI,” in *Health for Some: The Political Economy of Global Health Governance*, eds., Sandra MacLean, Sherri Brown, and Pieter Fourie (New York: Palgrave MacMillan, 2009), 118–129.

¹² Robert Arno, *Philanthropy and Cultural Imperialism: The Foundations at Home and Abroad* (Boston: GK Hall, 1980).

¹³ E. Richard Brown, “Public Health Imperialism: Early Rockefeller Programs at Home and Abroad,” *American Journal of Public Health* 66, no. 9 (1976): 897; Bruce Jennings, *Foundations of International Agricultural Research: Science and Politics in Mexican Agriculture* (Boulder: Westview Press, 1988): 185–188.

¹⁴ Eric Holt-Gimenez, Miguel A. Altieri, and Peter Rosset, “Ten Reasons Why the Rockefeller and the Bill and Melinda Gates Foundation’s Alliance for Another Green Revolution Will Not Solve the Problems of Poverty and Hunger in Sub-Saharan Africa,” *Food First Policy Brief* no. 12 (October 2006): 1–11.

¹⁵ Anne-Emanuelle Birn, *Marriage of Convenience: Rockefeller International Health and Revolutionary Mexico* (Rochester: University of Rochester Press, 2006).

¹⁶ Peter Utting, *UN-Business Partnerships: Whose Agenda Counts?* (Geneva: UNRISD, 2000).

approach to public health and technological approach to agriculture);¹⁷ (ii) market-liberalism (i.e. functioning as a vehicle for facilitating US hegemony by expanding markets for American firms);¹⁸ and (iii) elitism in governance (i.e. skewing global research trajectories based on individual interests,¹⁹ and undermining the legitimacy of public institutions via the promotion of informal governance mechanisms outside of IO control).²⁰ Its legitimacy in global governance is diminished by its private actor status, exemplified by its lack of transparency regarding how it makes decisions,²¹ and that it cannot be held accountable for its actions.²² BMGF is thus considered by critical scholars to be an enabler of a top-down, technocratic approach to development, operating with insufficient accountability, transparency and legitimacy. Ultimately those employing a critical perspective consider the Foundation as incapable of challenging the structural determinants of inequality so long as it aligns itself with actors who benefit from such inequity.

Current concern over BMGF's perceived lack of legitimacy, accountability and bias for technology and avoidance of social determinants of health are consistent with larger historical reservations over American philanthropic influence in development. These concerns originated in the neo-Gramscian literature in the 1980s, which also spoke to but was by no means limited to public health.²³ What binds the two waves of critical literature examining the role of the Foundations in global health and agricultural development are the strong concerns expressed over the particular ideas that the Foundations have advanced

¹⁷ Anne-Emanuelle Birn, "Gates's Grandest Challenge: Transcending Technology as Public Health Ideology," *The Lancet* 366, no. 9484 (2005): 514–519.

¹⁸ Inderjeet Parmar, *Foundations of the American Century: The Ford, Carnegie, and Rockefeller Foundations in the Rise of American Power* (New York: Columbia University Press, 2012).

¹⁹ David McCoy, Gayatri Kumbhavi, Jinesh Patel, and Akish Luintel, "The Bill & Melinda Gates Foundation's Grant-Making Programme for Global Health," *The Lancet* 373, no. 9675 (2009): 1645-1653.

²⁰ Simon Rushton and Owain Williams, "Private Actors in Global Health," in *Partnerships and Foundations in Global Health Governance*, eds., Simon Rushton and Owain Williams (New York: Palgrave Macmillan, 2011), 18–19; David McCoy and Lindsey McGoey, "Global Health and the Gates Foundation: In Perspective," in *Partnerships and Foundations in Global Health Governance*, eds., Simon Rushton and Owain Williams (New York: Palgrave Macmillan, 2011), 152, 156.

²¹ The Lancet, "What Has the Gates Foundation Done for Global Health?" *The Lancet* 373, no. 9675 (2009): 1577.

²² Kent Buse and Gill Walt, "Global Public-Private Partnerships. Part II: What are the Health Issues for Global Governance?" *The Bulletin of the World Health Organization* 78, no. 5 (2000): 704-705; see also McCoy, Kumbhavi, Patel, and Luintel.

²³ See for example: Edward Berman, *The Influence of the Carnegie, Ford, and Rockefeller Foundations on American Foreign Policy: the Ideology of Philanthropy* (Albany: State University of New York Press, See also: Jennings, *Foundations of International Agricultural Research: Science and Politics in Mexican Agriculture*.

regarding the determinants of and solutions to development-related challenges, and the processes through which those ideas are advanced in the policy arena.

Critical scholars have played an important role in illuminating RF and BMGF's influence in public policy formation related to public health and agricultural development. However by fixating on the Foundations' status as members of the global elite operating with minimal accountability and limited transparency compared to their public sector counterparts, I argue that the critical lens has served to distract from RF and BMGF's chief function as global governors, whilst understating their individual agency as discrete actors in world politics.

RF and BMGF's comparative advantage over other actors has not simply been their ability to bring needed resources to bear on issues adversely affecting large segments of the world's poor. Without explicitly chastising them, the Foundations have provided Northern states, IOs, and most recently pharmaceutical and agrochemical companies with institutional frameworks that work to compensate for their individual shortcomings as global governors.

This thesis differentiates itself from the liberal view of RF and BMGF's power through the argument that knowledge construction has been and continues to be the basis of the Foundations' agency in global governance. While conceding that as non-state actors, the two foundations are unable to advance their agendas autonomously,²⁴ the dissertation challenges the liberal perspective that RF and BMGF have merely been supporters of political change initiated by states.²⁵ In fact, they have been the catalysts of some of the most significant innovation in governance developed over the last half century, focused on the development and distribution of public goods geared towards the world's poorest people. The combined effectiveness and political palatability of their ideas and strategies concerning how to strengthen public health and agricultural systems across the developing world has ensured those same ideas and approaches have been embraced and institutionalized by states.

²⁴ Margaret E. Keck and Katheryn Sikkink, *Activists Beyond Borders: Advocacy Networks in World Politics* (Ithaca: Cornell University Press, 1998), 98-99.

²⁵ Helmut K. Anheier and Siobhan Daly, "Philanthropic Foundations: A New Global Force?" in *Global Civil Society Yearbook 2004/2005*, eds., Mary Kaldor, Helmut K. Anheier, and Marlies Glasius (London: Sage, 2004), 158-174.

The liberal-critical divide over the net-benefit of RF and BMGF's involvement in the governance of global health and agricultural development underscores that the ability of a single private actor to shape how collective action problems are approached remains an issue of great theoretical and practical relevance for those who study the distribution of power within the world order. While other foundations have been examined in other sectors, to date, *no single work* has sought to categorize these two foundations as a novel form of transnational actor or provide an explanation for their agency over space and time in the governance of global health and agricultural development. This dissertation seeks to fill that gap.

By drawing attention to RF and BMGF's agency, I am not seeking to make a generalizable argument about private philanthropic influence in world politics. Rather, I illuminate two exceptions that have attained an anomalous degree of policy influence because of their ability to shape collective action through knowledge construction.

The primary goal of this thesis is to demonstrate how knowledge construction has been the basis of RF and BMGF's power and authority in global governance. The long-term relevance of RF and BMGF's influence to the theory and practice of global governance, I argue, provides a new way of conceptualizing knowledge power broadly conceived as well as private governance as it relates to the provision of public goods. Consequently I argue that RF and BMGF have direct relevance to the broader literature on global governance theory related to public-private cooperation and knowledge power.

Since 1972, considerable scholarly attention has been paid to how the transnational network form has heightened the influence of non-state actors in world affairs.²⁶ While states as a typology are still largely viewed as the most powerful and legitimate actors operating in the

²⁶ See for example, Susan Strange, *The Retreat of the State: The Diffusion of Power in the World Economy* (Cambridge: Cambridge University Press, 1996); Sanieev Khagram, James V. Riker, and Kathryn Sikkink, *Restructuring World Politics: Transnational Social Movements, Networks, and Norms* (Minneapolis: University of Minnesota Press, 2002); Michelle Betsill and Harriet Bulkeley, "Transnational Networks and Global Environmental Governance: The Cities for Climate Protection Program," *International Studies Quarterly* 48 (2004): 471–493; D. Stone, "Global Public Policy, Transnational Policy Communities, and Their Networks," *Policy Studies Journal* 36 (2008): 19–38; and William K. Carroll, *The Making of a Transnational Capitalist Class: Corporate Power in the 21st Century* (London: Zed Books, 2010).

world order, the hierarchy of non-state global governors remains unclear.²⁷ Accordingly, this work seeks to contribute to a range of theoretical attempts to frame power,²⁸ how non-state trans-national actors employ power to achieve influence,²⁹ and where sites of private authority in global governance lie.³⁰

Moreover the focus on both global health and agricultural development provides a unique opportunity to bridge common interests in private governance: for example, the blurring of private and public authority that is occurring across the development spectrum. Through a survey of some of the Foundations' more prominent initiatives in the domains of global health and agricultural development, this dissertation seeks to provide a clearer understanding of the power exhibited by two unique and highly relevant actors in global affairs.

RF and BMGF do not fit neatly within existing actor categories in world politics. For example, RF has a legacy of providing technical advice to governments for improving services, such as disease control, which in the post-war era are almost exclusively provided by states. This advisory role is atypical for a private organization, for it is usually held by other public organizations, whether national such the United States Centers for Disease Control and Prevention, or international, such as UN specialized agencies. Yet the Foundation has also been a catalyst for bringing private sector resources to bear on these same public sector challenges, and an important underwriter of the activities of NGOs working at the grassroots level. Its proven capacity to innovate around public sector shortcomings and market failures, and its willingness and ability to interface between public, private and third sectors, in pursuit of increasing access to public goods, make it and its intellectual progeny a wholly unique form of transnational actor. Consequently, I argue that when viewed in isolation, no single theory sufficiently can explain the agency of RF and

²⁷ See for example Stephen D. Krasner, "Abiding Sovereignty," *International Political Science Review* 22, no. 3 (2001): 229-251; Deborah D. Avant, Martha Finnemore, and Susan K. Sell, eds., *Who Governs the Globe?* (Cambridge: Cambridge University Press, 2010).

²⁸ Contrasting, for example, power as conceptualized by R. Dahl, "The Concept of Power," *Behavioral Science* 2, no. 3 (July 1957): 201; with Barnett and Duvall, "Power in International Politics," 39-75.

²⁹ Robert Keohane and Joseph Nye, *Transnational Relations and World Politics* (Cambridge: Harvard University Press, 1972).

³⁰ See for example Claire Cutler, Virginia Haufler, and Tony Porter, *Private Authority and International Affairs* (New York: University of New York Press, 1999).

BMGF. However, when modified and fused, existing theories of power can in fact be sufficiently adapted to provide explanation for the two foundations' influence in global governance.

First, this research builds on the theory of neo-functionalism.³¹ Proponents of neo-functionalism accurately predicted that technocratic influence over collective action would emerge from sources other than the IOs, which functionalists such as David Mitrany envisioned as the future centers of global governance.³² A lack of consensus among experts on complex issues has driven this emergence, and is explained by the fact that complexity ensures problems can be conceptualized in very different ways.³³ Attaining public policy influence through expertise means demonstrating to governments the merit of embracing particular ways of understanding and solving complex problems.

Second, the dissertation leans heavily on the concept of epistemic community concept, often associated with Peter Haas.³⁴ Historically, RF achieved policy influence at the national level by cultivating epistemic communities within the public sectors of the countries where the Foundation worked and building support for their unifying ideas through demonstrations of effectiveness. In this way, RF functioned as a norm entrepreneur,³⁵ providing both visibility and credibility to particular ideas up for consideration in a competitive ideational realm. Moreover RF's agency shows that decentralized and non-hierarchical global policy networks linking state and non-state actors are by no means a recent phenomenon.³⁶ While this study differentiates itself from Haas's work by showing that public policy formulating epistemic communities are cultivated within and emerge from sources other than public sectors, it nonetheless reinforces his core argument that for epistemic communities to see their ideas and norms institutionalized, states must first accept them.

³¹ See for example Ernst B. Haas, *Beyond the Nation State* (Stanford: Stanford University Press, 1964).

³² David Mitrany, *The Functional Theory of Politics* (New York: St. Martin's Press, 1975).

³³ Karen Litfin, *Ozone Discourses* (New York: Columbia University Press, 1994), 41.

³⁴ Peter Haas, "Introduction: Epistemic Communities and International Policy Coordination," *International Organization* 46, no. 1 (1992): 1-35.

³⁵ Martha Finnemore and Kathryn Sikkink, "International Norm Dynamics and Political Change," *International Organization* 52, no.4 (1998): 887-917.

³⁶ See for example Jan Martin Witte, Wolfgang H. Reinicke, and Thorsten Benner, "Beyond Multilateralism: Global Policy Networks," *International Politics and Society* 2 (2000): 176-88.

Third, the research informing this dissertation draws inspiration from previous attempts to understand structural change,³⁷ and builds directly on the work of Susan Strange,³⁸ Doris Fuchs,³⁹ and others,⁴⁰ illuminating the indirect authority of private actors differentiating itself from these works through its focus on private, not-for-profit, philanthropic entities seeking public policy influence.

Despite this differentiation, it is argued that the three ways of conceptualizing corporate power, as laid out by Fuchs,⁴¹ apply equally to RF and BMGF. First, RF and BMGF's power can be seen as being discursive, in that they have demonstrated an ability to successfully define or "frame" problems. Second, their power can equally be described as being instrumental, in that their frameworks for strengthening public health and agricultural development across the Global South has been repeatedly embraced by states whom they depend upon to see their goals realized. Third, their power can be conceptualized as being structural because of their ability to set both research and policy agendas. Historically RF attained agenda-setting power via the construction of epistemic communities within public sectors, which states looked to, in order to establish the rules and operational frameworks of the systems governing the provision of public goods intended to strengthen both public health and food security in both individual countries and across the Global South. Yet both RF and BMGF have attained structural power through their significant endowments, as a plethora of aspiring grantees seek their funds and are willing to work with the rules and processes favoured by the Foundations. RF and BMGF have used this structural power to bring innovative new governance approaches (e.g. productive development partnerships) to the attention of states, whose support is needed if they are to be institutionalized. Yet through the Foundations' willingness to work within the confines of dominant paradigms (e.g. the neoliberal model), evidenced through their contemporary promotion of governance innovations that do not call for fundamental changes to the rules of the global political

³⁷ Steven Bernstein, *The Compromise of Liberal Environmentalism* (New York: Columbia University Press, 2001).

³⁸ Susan Strange, *States and Markets* (London: Pinter Publishers, 1988).

³⁹ Doris Fuchs, "The Commanding Heights?: The Strength and Fragility of Business Power in Global Politics," *Millennium* 33, no. 3 (2005): 771-802.

⁴⁰ Jennifer Clapp and Doris Fuchs, "Agrifood Corporations, Global Governance and Sustainability: A Framework for Analysis," in *Corporate Power in Global Agrifood Governance*, eds., Jennifer Clapp and Doris Fuchs (Cambridge: MIT Press, 2009), 3.

⁴¹ Fuchs; Doris Fuchs and Marcus Lederer, "The Power of Business," *Business and Politics* 9, no. 3 (2007): 1-17.

economy, they may also be using their structural power to support existing structures of the global political economy which contribute to the problems they seek to overcome.

1.3 The Empirical Evidence

In the first two empirical chapters, I show how RF's influence over how public health and agricultural challenges have been addressed across the global South, has been contingent on the Foundation's ability to perform three functions.

First, from the second decade of the twentieth-century to the present, RF has been an enabler of *science-enabled innovation*. As such the Foundation has been effective in demonstrating for would-be adopters, how science and resultant technology can provide solutions to longstanding challenges perceived to be jeopardizing public health and food security and constraining economic development.

Second, in the immediate post-colonial era, RF's technical expertise served as a point of entry for advising developing country governments on how their public health and agricultural systems were best organized. In all of the countries where it operated in this period, RF enabled *country-level epistemic expansions*, meaning the Foundation facilitated for states the training of indigenous communities of experts in select scientific disciplines. By virtue of their training, these communities of experts approached health and agricultural problems in ways that reflected and reinforced the dominant norms and ideas guiding the Foundation's work. RF's epistemic expansions heightened the credibility of its positions within national public policy arenas, and with the rise of collective consciousness embodied by the establishment of the League of Nations (LN), within international public policy making institutions the Foundation helped forge.

Third RF has proven itself to be a master of *private diplomacy*. This means that the Foundation has repeatedly demonstrated a capacity to convene informal, private dialogue between those actors—initially states and multilateral organizations, but later civil society organizations and firms—whose individual receptivity and cooperative ability have been deemed essential for

the successful institutionalization of the Foundation's strategies and institutional frameworks designed to strengthen public health and agriculture in developing countries.

In the neo-liberal era, Northern governments expressed a clear volition for private sector involvement in the development and distribution of global public goods. RF's framework for creating vaccines for neglected diseases in the face of cuts to public sector research capacity accommodated this volition. The product development partnership paradigm used public funds and the promise of agenda-setting power to entice firms into innovating for the world's poor, in order to overcome important state and market gaps. RF began successfully applying this approach in the early 1990s to such neglected diseases as HIV/AIDS, tuberculosis (TB) and malaria, which serves to demonstrate the Foundation's unique capacity catalyze normative and institutional change in global governance in the absence of any dramatic changes in the overall distribution of political power.

In the second two empirical sections, I show how BMGF has embraced and expanded the scale of public-private partnerships as the basis for increasing access to public goods across the global South. While RF drew the scientific blueprints and business plans of many of the most prominent global health and agricultural partnerships in existence today, BMGF has become the primary financial backer for all of these initiatives. Moreover, in building programs from scratch, BMGF has relied extensively on RF's network for guidance, as external advisors but also for filling leadership positions within the Foundation itself. This is particularly evident in its still nascent agricultural program.

Despite RF serving as an important inspiration for the Gates family in the creation of their foundation, there are substantial differences between the two organizations. RF's credibility within the global South has been attained in large part by its long history of public sector capacity building in science, with an emphasis on providing advanced training to individuals through post graduate fellowships. While BMGF has shown considerable interest in investing in science, with some notable exceptions, it has been far more focused on end-points and silver bullets than investing in directly into the training of human resources.

Moreover whereas RF for much of its history decentralized its staff, those of BMGF have been concentrated at its headquarters in Seattle. For decades RF had field officers based in the countries where it has operated, who were constantly cognizant of on the ground realities, and directly involved in managing research or operational programs and training indigenous staff. BMGF by contrast has a handful of sparsely staffed regional offices and no operational programs. It has instead relied on external consultants to inform its programs, and remains dependent on intermediary organizations to implement its grants.

Furthermore, whereas RF's grant making has relied heavily on building personal relationships and providing high-degrees of latitude to grantees as to how they achieve their ends, BMGF has moved towards a matrix-scale approach. Its emphasis on metrics and shorter end-points is both a product of making grants of much higher magnitude and a reflection of increasing bureaucratization within the organization, which now employs over one thousand people.

Finally, since its inception, BMGF has been represented on the boards of organizations it has played a lead role in creating or sustaining. With few exceptions, RF has had no representation on the board of entities it was involved in establishing. Instead, however, these new entities effectively became spin-offs of RF, with staff members leaving the Foundation to play a leadership role in the new organizations. While BMGF lacks RF's historical memory and legacy in public sector capacity building, knowledge structures—even if unoriginal—remain the basis of its agency in global governance. However the degree to which BMGF can adapt to future shifts in the global distribution of political and economic power has yet to be determined. The implications of its agency and the significance of its contributions to global governance may only be appraised based on the first twenty years of its existence.

In addition to providing a brief synopsis of the dissertation's main arguments, the conclusion illuminates three broader implications of the embrace of RF and BMGF driven partnership paradigm for the governance of global health and agricultural development.

The first is that while PPPs have helped IOs such as the World Health Organization (WHO) and the Food and Agricultural Organization of the United Nations (FAO) perform their intended functions, they have also provided states with *institutional alternatives* through which to channel health and agricultural-related overseas development aid, which has indirectly undermined the IOs' status as the lead coordinators of collective action in their respective domains.

Second, through PPPs, RF and BMGF have facilitated the unlocking of privately held intellectual property for the intended benefit of the public good without radical changes being made to the international trade law. However their ability to bring about such governance innovation has been limited to issue areas where they have demonstrated expertise, and trade-related intellectual property rights are just one of many drivers of global inequity adversely impacting public health and agricultural development across the global South.

Third, the proliferation of the PPP paradigm across the development spectrum has provided firms with new opportunities to become formally involved in the development and management of institutional frameworks guiding collective action aimed at reducing global disparities. While this has increased such firms agenda-setting power in global governance, through PPPs, the Foundations are illuminating how firms can help public authorities reduce socio-economic disparities without deriving profit or incurring financial risk.

1.4 Methodology

A combination of historical, interpretive and comparative approaches were employed to examine the central question of how the two Foundations exhibit power in global governance. This study is qualitative in approach given the emphasis it places on understanding how individuals associated with RF and BMGF perceive *reality* (i.e. what they perceive to be the core determinants of the problems they have involved themselves in addressing).⁴² More specifically, I incorporate elements of two particular qualitative research

⁴² Lesley Gross Portney and Mary P. Watkins, *Foundations of Clinical Research: Applications to Practice* (Upper Saddle River: Prentice Hall Health, 2000), 272.

approaches in order to answer the question of how the two foundations influence outcomes in global governance. Through the first approach, interpretive biography⁴³, I set out to describe the attitudes and values of the professional groups working for, advising and empowered by RF and BMGF, related to public health and agricultural development. The second approach is that of phenomenology, which seeks to illuminate the interpretations of a particular phenomenon (in this case the influence of RF and BMGF in the governance of global health and agricultural development) by individuals who have experienced it (e.g. former and current program officers, decision makers within the two Foundations).⁴⁴

A comparative case study analysis,⁴⁵ of RF and BMGF's work in public health and agricultural development, formed the basis of my explanations of how the two foundations differ. In this regard I sought to explain variation between what they do, why and how, with an emphasis on looking at the Foundations' initiatives in a temporal context to assess the degree of commonality in their approaches.

Two stages of research informed this study. The first stage (from January 2010-October 2010) involved an extensive review of existing literature (monographs, journal articles, Foundation documents, and print media) on the RF and BMGF's work in global public health and agricultural development. This was combined with a review of existing power theory broadly defined to gauge its relevance to the research question of how these two private American foundations exert influence in global governance, how this has been sustained over time, and why such agency matters.

These reviews both informed and were supplemented by thirty-four key informant interviews (approved by the University of Waterloo's Office of Research Ethics: ORE # 16468), undertaken in the second stage of research (from November 2010-January 2012). In an attempt to expose the beliefs and values informing the two foundations' agendas and answer the principal questions that formed the basis for this project, sixty-five interview requests were sent to current and former Foundation employees, known external advisors,

⁴³ Norman K. Denzin, *Interpretive biography* (Newbury Park: Sage Publications, 1989).

⁴⁴ Portney and Watkins, *Foundations of Clinical Research*, 273-74.

⁴⁵ See for example Alexander R. George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences* (Cambridge: MIT Press, 2005).

representatives from state development agencies (e.g. The United States Agency for International Development (USAID) and IOs (e.g. WHO)), organizations established with Foundation monies (e.g. The International Rice Research Institute (IRRI)), grantees, as well as non-associated professionals working in public health and agricultural development in the public, private and third sectors. Thirty-four of these individuals agreed to semi-structured telephone interviews lasting from between 25 to 150 minutes in duration.

Subjects were selected based on the perceived likelihood of them being a rich source of information. Examples of interviewees include Akin Adesina, Former Vice-President for Alliance for a Green Revolution in Africa (AGRA); Catherine Bertini, Former Executive Director of the World Food Program; Robert Herdt, a former Vice-President of RF ; Tikki Pang, Former Director of the World Health Organization's Research Policy and Cooperation department; Gordon Perkin, Co-Founder of the not-for-profit Program for Appropriate Technologies in Health (PATH) and the inaugural President of BMGF's Global Health Program; Gary Toenniessen, Managing Director of RF and the founding President (interim) of AGRA; Tachi Yamata, Former President of BMGF's Global Health Program; Ariel Pablos-Mendez, former Director of Health Equity at RF; and Robert Zeigler, Director General at the International Rice Research Institute (IRRI).

All interviews were 'semi-structured' to provide a common thematic template and a means to compare responses but also to allow for sufficient flexibility to capitalize on opportunities afforded by individual interviewees' unique professional circumstances. This format provided an opportunity to ask both very general and very specific questions.

Examples of general questions posed to interviewees were as follows:

- Can you please describe the processes through which the (BMGF) Global Health program identifies funding priorities, makes grant decisions and reviews internal policies and how this may have changed in the last decade?

- How, in your view, is the proliferation of global health partnerships occurring outside of UN framework affecting the ability of WHO to fulfill its mandate as the technical and coordinating authority for health issues in the international sphere?
- What, from your perspective, does accountability look like for an organization that advocates ideas, which to be realized – others must ultimately embrace or implement?

Issue-specific questions posed to interviewees included the following:

- Can you please speak about the evolution of the Montpellier panel (e.g. the individuals involved in establishing it, the rationale, and the role - if any played - by RF/ BMGF)?
- Up until recently, BMGF was a primary funder to the CGIAR without regular member status. Accordingly, what were the motivations underlying the Foundation’s decision to become a regular member of CGIAR?
- What is the Foundation’s view is on compulsory licensing?

Each interview was built on those preceding it until the data being collected no longer yielded new information, which indicated that the sample size was sufficient. All answers to the same questions were grouped and reviewed to allow for the identification of common themes. To be included in the dissertation, questions of fact required confirmation in the form of at least one published source. Because a primary focus of this project was to illuminate the ideas and norms guiding RF and BMGF, individual perspectives were included when it became clear that such perspective were representative of the views of a larger group. This confirmation came in the form of the same or similar answers to common questions. Moreover additional sources of data, such as newspaper articles and speeches, were used to “triangulate” information, concepts and normative perspectives. The focus of

the data analysis and interpretation was to identify themes in what were largely narrative descriptions provided by interviewees.⁴⁶

1.5 Chapter synopses

Chapter 2 provides an overview of existing explanations for RF and BMGF's policy-influence in the domains of public health and agricultural development. This survey reveals that almost all analyses undertaken to date have employed either liberal or critical theoretical perspectives, which has produced two markedly different explanations of the Foundations' power in these two domains.

Chapter 3 demonstrates how existing theory related to public-private cooperation and knowledge power can be used to provide an alternative explanation for the two Foundations' influence in these two issue areas.

Chapters 4 to 7 constitute the empirical chapters, which provide substance to the theoretical claims advanced above.

The final chapter provides a summary of the dissertation's main arguments and casts light on three implications of the global diffusion of the Foundation-championed public-private partnership paradigm in the governance of global public health and agricultural development.

⁴⁶ Portney and Watkins, *Foundations of Clinical Research*, 274-277.

Chapter 2: Existing explanations for RF and BMGF agency in global governance

2.0 Introduction

This chapter begins by locating private foundations as products of an American polity historically distrustful of “big” government yet at the same time cognizant of the need for sources of capital and innovation to fill gaps created by public and private sectors. I then examine the longstanding neglect by mainstream International Relations (IR) scholars of the Rockefeller Foundation (RF), which I attribute to the intangibility of knowledge power. Subsequently, I review the rich historiography on RF’s efforts to strengthen public health and agricultural development across the global South, which has been created by a diverse array of scholars, whose analyses I divide into two liberal and critical perspectives broadly defined. This liberal-critical divide I argue pertains equally to the Bill and Melinda Gates Foundation’s (BMGF’s) contemporary efforts to shape collective action in the same two domains. The critical-liberal divide, I contend, has meant that RF and BMGF have typically been portrayed as either members of the transnational capitalist elite working to advance the interests of their peers or as aids of interstate cooperation committed to the principles of idealism, and later liberal institutionalism. Each perspective has provided valuable and unique insights as to how the Foundations influence outcomes as well as the implications of their influence. At the same time, I argue, both perspectives have tended to overemphasize the Foundations’ loyalties while understating their individual agency.

RF and BMGF knowledge structures have not overtly challenged political and economic power disparities in the interstate system. Yet based on their individual organizational contributions that have altered the way complex problems have been addressed through collective action, neither have they sought to reinforce the status quo. Indeed, the institutionalization of the Foundations’ strategies has led to fundamental changes in how governments have organized individual and collective responses to public health and agricultural challenges in developing countries.

Moreover, in the neoliberal era, the Foundations have been effective champions of Public-Private Partnerships (PPPs) as an approach to governing global health and agricultural

challenges. The embrace by governments of RF and later BMGF-enabled PPPs, has resulted in non-state actors—namely International Organizations (IOs), Multinational Corporations (MNCs) and Civil Society Organizations (CSOs)—changing their behaviors and cooperating for the benefit of the world’s marginalized in ways that prior to 1995 would have seemed unimaginable. This suggests that neither those working exclusively through either liberal or critical lenses have sufficiently considered the social constructivist position that knowledge construction can, in and of itself, be a vehicle for autonomous agency in world politics.

The willingness and capacity of the Foundations to work around global power disparities is significant, as critical scholars of health and agriculture have long questioned not only the credibility of RF and BMGF’s views of how global health inequities and agricultural challenges should be overcome but also the political compromises that the two Foundations have been willing to make in pursuit of achieving their goals. Yet critical lenses, which have framed the Foundations as perpetuators of a science and technology approach to development, have done little to illuminate RF’s longstanding and BMGF’s more recent capacity to catalyse institutional innovation within the dominant system that benefits the world’s poor.

As non-state actors, RF and BMGF are undeniably limited in their ability to affect the global distribution of political and economic power, meaning they lack the means to catalyze “transformative” or systematic change, which only occurs when decision making power is conferred to those previously marginalized. However as “norm entrepreneurs,”¹ they have repeatedly demonstrated that innovation in governance can reduce the adverse effects of socio-economic inequity in the absence of changes to the global power structure, which underpins such inequities. Their outputs serve to undermine claims that any attempt at innovation to solve the challenges associated with marginalization will otherwise fail because the root of the problems will remain unaddressed.² Accordingly, RF and BMGF should not be seen as conservative actors seeking to maintain the status quo but rather catalysts of innovation in global governance.

¹ Martha Finnemore and Kathryn Sikkink, “International Norm Dynamics and Political Change,” *International Organization* 52, no. 4 (1998): 887-917.

² See for example Nino Antadze and Francis Westley, “Funding Social Innovation: How Do We Know What To Grow?” *The Philanthropist* 23, no. 3 (2010): 343-356.

Ideological myopia associated with reliance on one theoretical lens appears to be the principal reason for the longstanding liberal-critical divide, which has distracted from RF and now BMGF's capacity to catalyze change via knowledge construction. As noted by Susan Strange, analyses undertaken by scholars wedded to particular theoretical lenses tend to provide explanations consistent with the general assumptions shaping those lenses. Their conclusions are largely inevitable because their research is teleological by design.³ Historically and continuing today, the role that private actors play in attempts to resolve public challenges is a polarizing subject, which ideologically-informed research tends to amplify. This study draws from a range of theoretical perspectives in an attempt to avoid the ideological and teleological trappings associated with examining its subject through a single theoretical lens.

2.1 – RF and BMGF as products of the American Polity

Much of the contemporary debate over the ideas and influence of RF and BMGF in global governance mirrors historical debates over the role and contributions of private philanthropic foundations in American society. Critical American historians have cast RF as an organization imbued with a faith in science and technology, committed to the principle of upward causation and as an underwriter of a technocratic elite within the United States via fellowships and project-based grants.⁴ Viewed through a critical lens, RF program officers have functioned as “managers of science,” catalyzing groundbreaking interdisciplinary research,⁵ certainly, but also actively lobbying for the advancement of reductionist forms of problem solving to the detriment of social-science methodologies.⁶ Seen in this light, RF's public policy influence within the United States has meant that, for example, social policy has played second fiddle to the biomedical paradigm as an approach to public health, which has invariably aided the rise of the now powerful healthcare industry. At the same time, it

³ Susan Strange, *States and Markets* (London: Pinter Publishers, 1988), 16.

⁴ Lilly E. Kay, *The Molecular Vision of Life: Caltech, the Rockefeller Foundation, and the Rise of the New Biology* (New York: Oxford University Press, 1993).

⁵ Robert E. Kohler, *Partners in Science: Foundations and Natural Scientists, 1900-1945* (Chicago: University of Chicago Press, 1991).

⁶ Edward K. Oasa and Bruce H. Jennings. “Science and Authority in International Agricultural Research,” *Bulletin of Concerned Asian Scientists* 14 (1982): 30-45.

has been argued by E. Richard Brown that RF's support for restricting entry into the medical profession has reduced Americans' access to healthcare, thereby increasing health inequities.⁷

Scholars, rooted in the liberal school,⁸ have taken a very different view of the contributions made by large foundations in American society.⁹ For these scholars, the primary utility of this unique independent power in the American political economy has been to subsidize social innovation and facilitate positive social change. As publicly subsidized vehicles through which a private vision of the public good is articulated and implemented within the public sphere, liberals acknowledge that private foundation agency illustrates that material wealth can translate into political influence.¹⁰ Nevertheless, through the liberal lens, not only have large foundations such as RF and the Ford Foundation (FF) been important providers of funding for progressive CSOs, they have also been creators of incentives for market engagement to ensure the production of needed public goods, thereby correcting for state and market failures giving rise to complex social problems.

While RF and BMGF continue to advance particular ways of understanding and responding to complex societal problems within the context of the United States, their importance as transnational actors lies in their success in filling gaps in global governance. In doing so, the two foundations have projected onto the world a model of problem solving that is uniquely American. While their ability to do so has been aided by twentieth-century American hegemony, chapters 4 to 7 demonstrate that the state-market gaps created by the ability of the United States to project its own power on the world have also been eased in the neo-liberal era by the two foundations functioning in this capacity.

⁷ E. Richard Brown, *Rockefeller Medicine Men: Medicine and Capitalism in America* (Berkeley: University of California Press, 1979).

⁸ See for example Helmut K. Anheier and Stefan Toepler, eds., *Private Funds, Public Purpose: Philanthropic Foundations in International Perspective* (New York: Springer, 1999); Kenneth Prewitt, "Foundations as Mirrors of Public Culture," *American Behavioral Scientist* 42 (1999): 977-986; Kenneth Prewitt, "American Foundations: What Justifies Their Unique Privileges and Powers," in *The Legitimacy of Philanthropic Foundations: United States and European Perspectives*, eds., Kenneth Prewitt, Mattei Dogan, Steven Hydermann, and Stefan Toepler (New York: Russell Sage Foundation, 2006), 27-46.

⁹ Prewitt, "Foundations as Mirrors."

¹⁰ Prewitt, "American Foundations," 30-45.

2.2 - Mainstream IR's longstanding neglect of RF and initial disinterest in BMGF

Until very recently, scholarship undertaken by mainstream IR scholars focused on the transnational activities of the large foundations has been limited. Perhaps it is not surprising then that the concept of RF and BMGF as discrete actors in world politics remains largely novel.

Peter Bell first brought attention to the political influence of professionally staffed and managed foundations with assets exceeding US\$ 100 million in a 1971 article examining the FF.¹¹ Large foundations such as FF and RF, he argued, were products and reflections of twentieth-century American society, whose resources in the post-colonial era were instrumental in the development of the health, agriculture and educational sectors of many Third World countries. Not only was FF a modernizing force, Bell argued that it was also a projector of liberalism, pluralism, gradualism and rationalism in the countries where it operated. Yet according to Bell, the autonomy of the large American foundations was limited, evidenced by the fact that FF and its peers were unwilling to challenge American foreign policy overtly. In fact, during the Cold War when Bell wrote his article, values such as liberalism and rationalism and an embrace of scientific reform espoused by FF were largely in sync with US foreign policy. As acknowledged by Bell himself, FF in this period was the largest financial supporter of social science research in Latin America. Moreover, Bell asserted, FF functioned as a proxy for the United States Agency for International Development and an ideological counter to Marxist revolutionaries and the Catholic Church.¹² Yet as will be demonstrated, numerous examples can be found of RF and BMGF working to change American foreign policy. This has occurred, however, through persuasion, for example in the form of evidence-gathering to substantiate positions advocated for and via funding other organizations to act as lobbyists, as opposed to open contestation.

¹¹ Peter Bell, "The Ford Foundation as a Transnational Actor Bell," *International Organization* 25 (June 1971): 465-478.

¹² *Ibid.*, 121; 116.

Bell's appraisal of FF was part of a larger, albeit brief surge in interest in non-state transnational actors. The transnational perspective, laid out in a volume edited by Robert Keohane and Joseph Nye, forced IR scholars to consider whether the rise of transnational organizations, which was seen to be changing attitudes and constructing new instruments of influence, were in fact making the state-centric paradigm inadequate for understanding world politics.¹³ Unfortunately, for those advocating this broadened perspective of authority in world politics, the general argument of the book was set up, according to Paul Wapner, as a zero-sum game. Questions as to whether an increase in transnational activity was undermining the state as the primary unit of analysis could "easily be beaten back by state-centric thinkers" which effectively occurred through Kenneth Neal Waltz's *Theory of International Politics*.¹⁴ The ensuing broad embrace of regime theory,¹⁵ which fixated on whether and how interstate regimes matter in international politics, effectively shut down interest in transnational actors for close to two decades.¹⁶ While critiques of regime theory for ignoring non-state actors abounded by the early 1990s, short shrift was paid to the influence of RF and BMGF in global governance by mainstream IR scholars, until quite recently.

Despite mainstream IR scholars' longstanding disinterest in RF, a diverse group of academics, including historians, sociologists, and political scientists, among others, have collectively produced a rich historiography chronicling the the Foundation's twentieth-century role in shaping the public health and agricultural trajectories of many developing countries, and it is to that collection this literature review first turns.

¹³ Robert Keohane and Joseph Nye, *Transnational Relations and World Politics* (Cambridge: Harvard University Press, 1972), xxi; xxiii.

¹⁴ Paul Wapner, *Environmental Activism and World Civic Politics* (Albany: SUNY Press, 1996), 162; Kenneth Neal Waltz, *Theory of International Politics* (Reading: Addison-Wesley Pub. Co., 1979).

¹⁵ John G. Ruggie, "Reconstituting the Global Public Domain: Issues, Actors and Practices," *European Journal of International Relations* 10, no. 4 (2004): 499-531.

¹⁶ Wapner.

2.3 – *The RF historiography at a glance*

This section provides a brief overview of existing explanations for RF's influence in the governance of global health and agricultural development. These are categorized as being either liberal or critical in their orientation, for there are very few examples of works that do not employ one of these two lenses—broadly defined—in their analysis of RF's influence. This polarity is important because it has resulted in the two very different assessments of the Foundation's purpose and agency in world affairs becoming prominent. On the one hand, the liberal perspective, exemplified by Amy Staples, sees RF's longstanding support for empowerment of IOs focusing on attaining freedom from want, as evidence that the Foundation's primary role in global governance has been to catalyze states' commitment to idealism and internationalism.¹⁷ Critical interpretations, in contrast, exemplified by Edward Berman's, and more recently Inderjeet Parmar's neo-Gramscian analyses, portray the Foundation as a vehicle that has been successfully employed to embed a positivist and pro-capitalist culture within the elite of developing countries.¹⁸ In the eyes of these theorists, this penetration of ideas and norms, served first and foremost in the twentieth-century to extend American control over production in the countries where RF operated.¹⁹ While merit can be found in both viewpoints, I argue that this longstanding historical liberal-critical divide which now also applies to analyses of BMGF in the current era has resulted in the Foundation's loyalties to Northern states being overemphasized, individual agency understated and comparative advantage over other actors in global governance underappreciated. Moreover with few exceptions, these studies have been geographically and issue-focused, leaving little opportunity for generalization across time and space as to how the Foundation's influence has been achieved and sustained.

¹⁷ Amy Staples, *The Birth of Development: How the World Bank, Food and Agriculture Organization, and World Health Organization Changed the World, 1945–1965* (Kent: Kent State University Press, 2006), 1-2.

¹⁸ Inderjeet Parmar, *Foundations of the American Century: the Ford, Carnegie, and Rockefeller Foundations in the Rise of American Power* (New York : Columbia University Press, 2012).

¹⁹ 1983).

2.31 Liberal perspectives of RF's contributions to global health and agricultural development

Seen through a liberal lens, RF's influence over how health challenges in developing countries have been approached has been derived from three distinct foci.

First, numerous multi-year country-level programs focused on public sector capacity building demonstrated to developing country governments the Foundation's commitment to their modernization. RF's establishment of the Peking Union Medical Hospital in China in 1915, for example, which was intended to be the locus of training for the country's medical elite,²⁰ and received strong backing from within the Chinese government, academics, and members of the business scientific community,²¹ embodies this, as well as the Foundation's commitment to the biomedical model which was so persuasive in that era. However this commitment to public sector capacity building can also be seen in Sri Lanka where RF developed its local health unit model, which integrated health services and emphasized prevention and education and the use of local resources to strengthen public health in predominantly rural areas.²²

Second, liberal scholars have also emphasized RF's commitment to scientific innovation for the public good, illustrated by its development of the world's first yellow fever vaccine in 1937.²³ Through the liberal lens, therefore, RF has been viewed as a modernizing force, largely welcomed by those it has aspired to help,²⁴ which has reduced developing countries' dependency on outside agents.²⁵

²⁰ Qiusha Ma, "The Peking Union Medical College and the Rockefeller Foundation's Medical Program's in China," in *Rockefeller Philanthropy and Modern Biomedicine: International Initiatives from World War I to the Cold War*, ed., William H. Schneider (Bloomington, Indiana: Indiana University Press, 2002), 158.

²¹ Laurence A. Schneider, "The Rockefeller Foundation, the China Foundation, and the Development of Modern Science in China," *Social Science and Medicine* 16 (1982): 1217-1221.

²² Soma Hewa, "Globalizing Primary Care: Rockefeller Philanthropy and the Development of Community-Based Approach to Public Health in Sri Lanka – What Can We Learn?" in *Philanthropic Foundations and the Globalization of Scientific Medicine and Public Health*, eds., Benjamin B. Page and David A. Valone (Lanham: University Press of America, 2007), 59-60.

²³ See Wilbur G. Downs, "The Rockefeller Foundation Virus Program: 1951-1971 with Update to 1981," *Annual Review of Medicine* 33 (1982): 1-30; William H. Schneider, *Rockefeller Philanthropy and Modern Biomedicine. International Initiatives from World War I to the Cold War* (Bloomington: Indiana University Press, 2002).

²⁴ See for example Ma; Laurence A. Schneider.

²⁵ Carl E. Taylor and Henry G. Taylor. "Community Based Primary Health Care: Empowerment and Equity," in *Philanthropic Foundations and the Globalization of Scientific Medicine and Public Health*, eds., Benjamin B. Page and David A. Valone (Lanham: University Press of America, 2007), 115-124.

Third, liberal scholars have framed RF as an enabler of inclusive approaches to collective action. Liberals have argued, for example, that its provision of support to nascent health-focused IOs such as the League of Nations Health Organization (LNHO) in the interwar period and its successor, the World Health Organization (WHO) in the wake of World War II (WWII), enhanced its effectiveness and provided a degree of legitimacy-through association that was otherwise lacking.²⁶

Moreover in response to a system of global health governance, which by the 1980s was deemed to be increasingly dysfunctional due to states, IOs, firms and CSOs acting without clear understanding of each others needs, the liberal lens has portrayed RF as a driver of coherence and innovation, which forged collaboration through diplomacy and an unwavering commitment to meeting the needs of the world's poorest countries. This role for liberals is embodied in the Bellagio meetings, the first of which was held in March 1984 and hosted by the Foundation at its conference centre in Bellagio Italy and was focused on how to reinvigorate existing immunization programs.²⁷ Subsequent gatherings saw its agenda broadened to the development of new models for research ensuring global pharmaceutical research and development met the needs of the global South, which led to RF showcasing public-private collaboration in the form of the product development partnership paradigm as a new form of global health governance.²⁸ These meetings have been cast by liberals as examples of RF's capacity for galvanizing the creation of global networks seeking policy reform held together by their commitment to common goals and visions for their realization.

On the subject of global agricultural development, liberals assert that broad support existed within the political and agricultural establishments of developing countries for RF's efforts, which were historically based on science-enabled innovation and the provision of advanced scientific training. The Mexican Agricultural Program, for example, which ran for two

²⁶ Martin David Dubin, "The League of Nations Health Organization," in *International Health Organizations and Movements*, ed., Paul P. Weindling (Cambridge: Cambridge University Press, 1995) 56-80.

²⁷ William Muraskin, *The Politics of International Health: The Children's Vaccine Initiative and the Struggle to Develop Vaccines for the Third World* (Albany: State University of New York Press, 1998), 4-5; 31.

²⁸ Michael Moran, "Philanthropic Foundations and Global Health Partnership Formation: the Rockefeller Foundation and IAVI," in *Health for Some: the Political Economy of Global Health Governance*, eds., Sandra J. MacLean, Sherri A. Brown and Pieter Fourie (Houndmills, Basingstoke: Palgrave Macmillan, 2009), 118-129.

decades beginning in 1941, has been framed as a cross-cultural encounter benefiting not only the Mexican government and the country's community of agricultural scientists. The Mexican government's receptivity could be attributed first and foremost to immediate benefits such as increased yields and economic growth associated with the embrace of RF ideas. However for liberals, the majority of the country's agronomists saw RF's offer of technical expertise an opportunity to move beyond the land reform policies implemented in the 1930s under the Cardenas administration, which were unable to address persistent natural impediments to progress such as diseases threatening the production of staple crops.²⁹

Beginning in the immediate post-colonial era but continuing to the present, liberals suggest that developing country agronomists have wanted to be seen as scientists, not as revolutionaries or bureaucrats.³⁰ The Foundation's International Program on Rice Biotechnology, which was initiated in 1984 and geared towards building public sector capacity in rice biotechnology in low and middle-income countries through partnerships with established research programs in Northern countries, has been framed as a continuation of earlier country-specific programs.³¹ RF's enduring emphasis on building technical capacity has thus been construed by liberal scholars as being mutually beneficial to both RF and developing country scientists.

Moreover liberal scholars note that RF also developed frameworks intended to improve the interstate system's capacity to meet the agricultural needs of low-income countries, which have been readily adopted. The most significant historical example of this is the Consultative Group on International Agricultural Research (CGIAR), which was planned as a public fundraising consortium for applied agricultural research. CGIAR was readily embraced by states because of its informal and voluntary structure and the flexibility provided to donors

²⁹ Joseph Cotter, "The Rockefeller Foundation's Mexican Agricultural Project: A Cross-Cultural Encounter, 1943-1949," in *Missionaries of Science: the Rockefeller Foundation and Latin America*, ed., Marcos Cueto (Bloomington: Indiana University Press, 1994), 98-99; 101; see also Robert Herdt, "People, Institutions and Technology: a Personal View of the Role of Foundations in International Agricultural Research and Development, 1960-2010," *Food Policy* 37 (2012): 179-190.

³⁰ Cotter.

³¹ J. O'Toole, Gary Toenniessen, T. Murashige, R. Harris, and Robert Herdt, "The Rockefeller Foundation's International Program in Rice Biotechnology," in *Rice Genetics IV*, eds., GS Khush, DS Brar and B. Hardy (Los Banos: New Delhi Science Publishers Inc. and International Rice Research Institute, 2001), 39-59.

to set the research focus of participating centers.³² As such, liberals view RF as having successfully extended its education efforts from the training of individuals to training the society of states.³³

In the new millennium, liberals see the Foundation continuing to develop novel approaches to strengthening developing country agricultural systems, seeking the engagement of all relevant actors. The Foundation's role as the chief architect of the Alliance for a Green Revolution in Africa (AGRA) is the best example. While AGRA is a stand-alone organization, it was spun-off from a pre-existing RF program built on the idea that increased production would not be a sustainable strategy for realizing food security in Sub-Saharan Africa if profitability for small-scale growers could not be assured. Yet ensuring this requires competent local delivery systems, which in turn requires securing buy-in commercial banks, multinational seed companies and governments.³⁴ For liberals, RF has been the catalyst of this change, thereby continuing its longstanding role as educator and enabler of cooperation in the global sphere, oriented towards the strengthening of public sector capacity.³⁵

2.32 Critical perspectives of RF's contributions to global health and agricultural development

While liberal perspectives tend to portray RF as a positive force in global governance, studies employing critical lenses typically view RF's ability to shape public policy in a much more negative light. This is significant, as most analyses of RF's influence over how public health and agricultural development has been approached across the global South have employed critical perspectives.

By and large those employing critical lenses have viewed RF's influence over global governance related to public health and agriculture as being discursive in nature, meaning its power has been rooted in its ability to successfully frame problems and solutions. Its assets,

³² Warren C. Baum, *Partners Against Hunger: The Consultative Group on International Agricultural Research* (Washington: The World Bank, 1986), 3; 25.

³³ Ibid.

³⁴ Gary Toenniessen, Akinwumi Adesina and Joseph DeVries, "Building an Alliance for a Green Revolution in Africa" *Annals of the New York Academy of Sciences*, (2008), 1136: 233-242.

³⁵ O'Toole, Toenniessen, Murashige, Harris, and Herdt.

according to critical scholars, have been used to create sites of authority in health and agricultural research at both the national and international level that have espoused ideas supporting scientific rationalism and global capitalism, which have served to suppress competing knowledge claims.

Critical historians of public health,³⁶ were the first to call into question the motivations and implications of RF transnational actor status. Anne-Emanuelle Birn and Armando Solórzano, for example, have argued that the Foundation's operational programs provided the means to embed, the same misguided "principles of scientific medicine,"³⁷ informing the United States' approach to public health education and practice in the public sectors of developing countries. RF's influence has meant solidifying the role of technology across the South as a means of addressing inherently socio-political problems.

Critical scholars have also suggested that while the Foundation provided developing countries with needed resources to address pressing health problems, RF's research priorities were often unrepresentative of the health needs of populations where they operated. This became particularly problematic following RF's introduction of the co-funding model, in which Southern governments became responsible for sharing the burden of Foundation-led initiatives. Requisite co-funding, Birn suggests, repeatedly led to a skewing of priorities in the countries where RF had operational public health programs and laid the basis for donor-driven agendas that predominate today in global health research and practice.³⁸

³⁶ See, for instance, E. Richard Brown, "Public Health Imperialism: Early Rockefeller Programs at Home and Abroad," *American Journal of Public Health* 66, no. 9 (1976): 897-903; Marcos Cueto, "Visions of Science and Development: The Rockefeller Foundation's Latin American Surveys of the 1920s," in *Missionaries of Science: the Rockefeller Foundation and Latin America*, ed., Marcos Cueto (Bloomington: Indiana University Press, 1994), 1-22; and Anne-Emanuelle Birn, *Marriage of Convenience: Rockefeller International Health and Revolutionary Mexico* (Rochester: University of Rochester Press, 2006).

³⁷ Anne-Emanuelle Birn and Armando Solórzano, "Health Policy Paradoxes: Science and Politics in the Rockefeller Foundation's Hookworm Campaign in Mexico in the 1920s," *Social Science and Medicine* 49, no. 9 (1999): 1197-1213.

³⁸ Birn, *Marriage of Convenience*; Paola Mejia, "Of Mice, Vaccines and Men: The Yellow Fever Research Program of the Rockefeller Foundation in Columbia, 1932-48," in *Philanthropic Foundations and the Globalization of Scientific Medicine and Public Health*, eds., Benjamin B. Page and David A. Valone (Lanham: University Press of America, 2007), 73-95.

Other critical scholars have gone further, suggesting that RF has effectively functioned as a proxy for the US government:³⁹ that it created health programs to reduce political instability threatening American economic interests,⁴⁰ while at the same time using the global South as a testing ground for disease eradication experiments.⁴¹

Echoing critical health-focused appraisals, RF's agricultural initiatives have elicited from critical scholars reactions ranging from inferences of naïve idealism,⁴² to outright hostility over a perceived capacity to produce irreparable social and ecological harm.⁴³ A common sentiment expressed by critical scholars is that RF used its agricultural research at the beginning of the Cold War to provide substance to American government claims that food insecurity in the face of uncontrolled population growth had the potential to elicit communist sympathies across the developing world.⁴⁴ Where critical accounts are united however is the pervasive sentiment that historically the Foundation attempted to use science to solve particular challenges—notably of hunger and poverty—that were inherently political in their origins, while at the same time exhibiting a liberal economic bias viewing production as the basis of a progressive social order. From this perspective, RF's agency has meant the silencing of competing knowledge claims and the transplantation of the industrial agriculture

³⁹ Brown, "Public Health Imperialism," 897; Robert Arno, *Philanthropy and Cultural Imperialism: The Foundations at Home and Abroad* (Boston: G.K. Hall, 1980); Saul Franco-Agudelo, "The Rockefeller Foundation's Antimalarial Program in Latin America: Donating or Dominating?" *International Journal of Health Services* 12 (1983) 51-67; Armando Solórzano, "Sowing the Seeds of Neo-Imperialism: The Rockefeller Foundation's Yellow Fever Campaign in Mexico," *International Journal of Health Services* 22 (1992): 529-554; and Marilyn Baily Ogilvie, "The Rockefeller Foundation, China, Western Medicine, and PUMC," in *Philanthropy and Cultural Context: Western Philanthropy in South, East, and Southwest Asia in the 20th Century*, eds., Soma Hewa and Philo Hove (Lanham: University Press of America, 1997), 21-38.

⁴⁰ Armando Solórzano, "The Rockefeller Foundation in Revolutionary Mexico: Yellow Fever in Yucatan and Veracruz," in *Missionaries of Science: The Rockefeller Foundation and Latin America*, ed., Marcos Cueto (Berkeley: University of California Press, 1994), 52-71.

⁴¹ Marcos Cueto, "The Cycles of Eradication: the Rockefeller Foundation and Latin American Public Health, 1918-1940," in *International Health Organizations and Movements*, ed., Paul Weindling (Cambridge: Cambridge University Press, 1995), 222-243.

⁴² John H. Perkins, "The Rockefeller Foundation and the Green Revolution, 1941-1956," *Agriculture and Human Values* 7 (1990): 6-18.

⁴³ Vandana Shiva, "The Green Revolution in the Punjab," *The Ecologist* 21, no. 2 (1991): 57-60; see also Shiva, *The Violence of the Green Revolution: Ecological Degradation and Political Conflict in Punjab* (New Delhi: Zed Press, 1992).

⁴⁴ See, for example, Perkins, *Geopolitics and the Green Revolution: Wheat, Genes, and the Cold War* (New York and Oxford: Oxford University Press, 1997); and Govindan Parayil, "Mapping Technological Trajectories of the Green Revolution and the Gene Revolution from Modernization to Globalization," *Research Policy* 32 (2003): 971-990.

to the developing world. This transformation has resulted in millions of subsistence farmers, who for millennia were the backbone of agrarian economies across the global South, being driven out of agriculture completely.⁴⁵

There is clear recognition on the part of critical scholars of RF's capacity to define what has been important related to development and to embed particular ideas in the societies in which it operated. Certainly there is little doubt that the Foundation has played a key role in the creation of sites of authority in international agricultural research. Like their liberal counterparts, critical scholars see RF as a vehicle for advancing the ideas of others, namely Northern, Western capitalist states. Once again, however, the implications of such are typically cast in a negative light.⁴⁶

In the first two decades of the post-war era, for example, modernization theory was the development paradigm traditional societies were expected to follow, premised on the idea that the Western liberal economy was the optimal end-point. Arriving at this end-point required Northern technical (i.e. scientific) expertise, which RF was more than willing to provide. According to Ole Jacob Sending and Iver Neumann, modernization theory legitimized the influence of RF across the global South.⁴⁷ Through applied research initiatives, the Foundation was actively engaged in defining what was important for international public policy planners to act upon. However, because these priorities were shared with Northern governments, most notably the United States, critical scholars have questioned the notion that RF's ideas were reached without the input of states espousing the same views.

Critical scholars have long expressed concern over RF's role as a framer of problems and solutions in agricultural development for two key reasons.

⁴⁵ Bruce Jennings, *Foundations of International Agricultural Research: Science and Politics in Mexican Agriculture* (Boulder: Westview Press, 1988), 185-188; Oasa and Jennings; and GRAIN and RAFI, "CGIAR: Agricultural Research for Whom?" *The Ecologist* 26, no. 6 (1996): 259-270.

⁴⁶ Berman, *The Influence of the Carnegie, Ford, and Rockefeller Foundations on American Foreign Policy: the Ideology of Philanthropy*

⁴⁷ Ole Jacob Sending and Iver Neumann, "Governance to Governmentality: Analyzing NGOs, States and Power," *International Studies Quarterly* 50, no. 3 (2006): 659.

The first reason is a belief that its commitment to development through science has resulted in policy plans premised on incorrect assumptions. The substantial gains in crop yields, for example, resulting from RF-inspired Green Revolution in countries such as Mexico and India have widely been perceived by critical scholars as having been offset by the Foundation's failure to see that social marginalization, rather than a lack of technology, was the primary impediment to food insecurity in these countries.⁴⁸

The second reason is that critical scholars typically come to very different conclusions regarding the implications of the Foundation's ideas being implemented than those highlighted by the proponents of said ideas. In addition to the displacement of countless small farmers, Vandana Shiva for example, has blamed the Green Revolution for catastrophic reductions in genetic diversity, increased vulnerability of crops to pests, soil erosion, water shortages, decreased soil fertility and increased micro-nutrient deficiencies linked to reduction of crop varieties.⁴⁹ Moreover by boosting cash crop production at the expense of other key food crops, economic vulnerability actually increases when prices fall or crops fail. Finally, the embrace of RF engineered high-yielding varieties created dependence on foreign inputs where none previously existed, while at the same time marginalizing organic methods of production.⁵⁰

For critical scholars such as Shiva, RF's discursive role in agricultural development has done far more to provide legitimacy for the expansion of Northern seeds companies in developing countries than it has to improving physical and economic well being of Southern small holders. Through the critical lens, RF's ideas have been synonymous with scientific rationalism and global capitalism, which have perversely served to perpetuate North-South inequities. Since the Foundations have by and large been considered by the majority of critical scholars as being part of the transnational ruling class and, by a smaller although vocal minority, as proxies of American power, there is little suggestion of them enjoying any true autonomy in global governance.

⁴⁸ Perkins, "The Rockefeller Foundation"; see also Nick Cullather, *The Hungry World: America's Cold War Battle against Poverty in Asia* (Cambridge: Harvard University Press, 2010).

⁴⁹ Shiva, "The Green Revolution."

⁵⁰ Shiva, *Stolen Harvest: The Hijacking of the Global Food Supply* (Cambridge MA: South End Press, 2000).

2.4 The Small But Growing Body of BMGF-focused Literature

Compared to RF, far less scholarly attention has been paid to BMGF's influence over the governance of global health and agricultural development. Moreover, the body of literature that does exist is focused almost entirely on the Foundation's global health program and is predominantly critical in orientation. The overall scarcity of scholarly literature can be attributed to the fact that as an organization formed a mere fifteen years ago, BMGF is a nascent entity compared to the now centenarian RF. The emphasis on health is explained by the fact that its global development program, within which its agricultural initiatives are situated, was only established in 2006, while its global health program has existed since the Foundation was formed in 1999. Finally, that critical analyses account for the majority of studies undertaken to date is most likely due to a combination of BMGF's heavy emphasis on science-enabled innovation, and its promotion of market-based solutions to overcoming health and development challenges. Moreover there is heightened awareness that the Foundation is having a considerable impact on the formulation of international public policy by acting as the primary backer of a litany of new global health focused PPPs. For while RF has played a central role in the formation and "normalization" of private sector participation in resolving historically public sector challenges,⁵¹ through unprecedented levels of philanthropic spending, BMGF is widely seen as the lead proponent and enabler of development partnerships today.⁵²

2.4.1 Liberal perspectives of BMGF's contributions to global health and agricultural development

Only a handful of scholarly works in existence today can be considered liberal in their analyses of BMGF's influence in global governance. These works have tended to portray the Foundation as an effective vehicle for bringing together historically reluctant parties for the benefit of the world's marginalized people. According to Michael Moran, the Foundation's positioning at the intersection of public, private and third sectors make it an effective

⁵¹ Moran, "Philanthropic Foundations."

⁵² See, for example, Simon Rushton and Owain Williams, "Private Actors in Global Health," in *Partnerships and Foundations in Global Health Governance*, eds., Simon Rushton and Owain Williams (New York: Palgrave Macmillan, 2011).

“interlocutor,” well placed to function as a broker of partnerships and sufficiently equipped to provide the necessary seed capital to ensure they get off the ground.⁵³

As will be shown in chapter 6, the advent of the Foundation-led Global Alliance for Vaccines and Immunization (GAVI) saw the establishment of a global coalition of state and non-state actors for the first time committed to working effectively in pursuit of the shared goal of facilitating access to vaccines within the world’s poorest countries. The role of BMGF in this coalition (since re-named the GAVI Alliance) has been that of a diplomat, principal leverager of funds and commitments for the issue of vaccination, and a disciplinarian, for example, in its demands that GAVI funding be performance-based.⁵⁴ In this light, BMGF has in the first decade of the new millennium ushered in the golden age in global health, with GAVI having served as the inspiration for a series of new bilateral initiatives (e.g. the President’s Emergency Plan for AIDS Relief (PEPFAR)) rolled out by Northern states who had become complacent to the health needs of the world’s poor.⁵⁵

To date, the Foundation’s approach to agricultural development has largely mirrored its approach to reducing health inequities. By taking on the role of the primary funder for the RF-inspired Alliance for a Green Revolution in Africa (AGRA), for example, the liberal lens sees BMGF as an enabler of innovative approaches to strengthening both public and private sector agricultural capacity in Sub-Saharan Africa.⁵⁶ Moreover, liberals credit the Foundation for illustrating how technology can play an important role in addressing the many agricultural challenges faced by both poor small-scale farmers and states in Sub-Saharan Africa. Its ability to bring firms such as Monsanto and Pioneer, which hold valuable intellectual property, into partnerships with states and communities is seen as crucial for progress in strengthening agriculture across Sub-Saharan Africa to be made.⁵⁷

⁵³ Moran, “Private Foundations and Global Health Partnerships: Philanthropists and ‘Partnership Brokerage,’” in *Partnerships and Foundations in Global Health Governance*, eds., Simon Rushton and Owain Williams (New York: Palgrave Macmillan, 2011), 134-137.

⁵⁴ William Muraskin, *Crusade to Immunize the World’s Children: The Origins of the Bill and Melinda Gates Children’s Vaccine Program and the Birth of the Global Alliance for Vaccines and Immunizations* (Los Angeles: USC Marshall BioBusiness Initiative, 2005).

⁵⁵ Susan Okie, “Global Health—The Gates-Buffett Effect,” *New England Journal of Medicine* 355, no. 11 (2006): 1085.

⁵⁶ Toenniessen, Adesina and DeVries.

⁵⁷ Robert Paarlberg, *Starved For Science: How Biotechnology Is Being Kept Out of Africa* (Cambridge: Harvard University Press, 2008).

2.42 - Critical perspectives of BMGF's contributions to global health and agricultural development

Critical scholars argue that BMGF exhibits the same bias held by RF for bringing technological solutions to bear on problems with deep socio-political determinants. This is most evident in their global health efforts, where the Foundation is deemed to be priming the technology pipeline in the face of limited public sector capacity across the global South to ensure product uptake and delivery, which critical scholars see as crowding out other viable and less resource intensive options.⁵⁸

Critical scholars also suggest that with the rise of BMGF, PPPs have become less about correcting for market failures and more about connecting people to markets, and BMGF is seen as embodying a market-based approach to philanthropy. Often dubbed “the new philanthropy” or “philanthrocapitalism,” this approach is premised on the assumption that applying the traditional business model to social problems will bring about positive social change. Critical scholars, however, see the Foundation’s embrace of this logic as indirectly shutting out other viable organizational models,⁵⁹ while at the same time being rife with contradictions. For example, by maintaining an investment portfolio oriented towards maximising returns, the Foundation’s tax-sheltered dollars profiting from the likes of Shell’s socially and ecologically damaging extraction operations in the Nigerian delta are paradoxically seen as furthering the exploitation of those they aspire to help.⁶⁰

For critical scholars of food security—typically allied with the food sovereignty and anti globalization movements—the BMGF’s foray into agriculture means the same mistakes incurred in Latin America and Asia during the original Green revolution will inevitably be

⁵⁸ Birn, “Gates’s Grandest Challenge: Transcending Technology as Public Health Ideology,” *The Lancet* 366, no. 9484 (2005): 514-519.

⁵⁹ Michael Edwards, *Just Another Emperor? The Myths and Realities of Philanthrocapitalism* New York: Demos and The Young Foundation, 2008; Sally Brookes, Melissa Leach, Henry Lucas and Erik Millstone, “Silver Bullets, Grand Challenges and the New Philanthropy,” *STEPS Working Paper 24* (Brighton: STEPS Centre, 2009), accessed April 1, 2011. <http://anewmanifesto.org/wp-content/uploads/brooks-et-al-paper-24.pdf>; Kent Buse and Chris. Naylor, “Commercial Health Governance,” in *Making Sense of Global Health Governance: A Policy Perspective*, eds., Kent Buse, Wolfgang Hein and Nick Drager (Basingstoke: Palgrave Macmillan, 2009), 188-89; 199-201.

⁶⁰ Charles Piller, Edmund Sanders and Robyn Dixon. “Dark Cloud over Good Works of Gates Foundation,” *The Los Angeles Times* (January 7, 2007), accessed January 8, 2007. http://www.latimes.com/news/nationworld/nation/la-na_gatesx07jan07,0,6827615.story?coll=la-home

repeated in the context of Sub-Saharan Africa. This is because the determinants of hunger and poverty are from the critical perspective largely structural in nature, meaning they stem from the inequities of the existing rules and operational frameworks of the international system. Sustainable solutions are not technological; however, the partnership approach embodied by AGRA seeks to distract from this fact. Viewed through the critical lens, BMGF will be a catalyst, not of food security or poverty reduction but of heightened economic inequality, environmental degradation and the overall loss of Africa's biodiversity.⁶¹

While more nuanced than their analytical peers focused on global agricultural development, critical scholars of global health nonetheless see the growing influence of BMGF in global health policy as unsettling if not highly problematic.

In a world characterised by a traditional scarcity of public sector research funds, the Foundation's sudden infusion of capital into a few select areas determined largely by the interests of the Gates family has been construed by some as having a skewing effect on global research trajectories, prioritising particular diseases or technologies that do not reflect the actual global burden of disease or the needs of the poor.⁶² Through the Grand Challenges for Global Health (GCGH) initiative, for example, a granting program run out of the United States National Institutes of Health but funded primarily by BMGF, the Foundation is deemed to be shaping what is researched with minimal accountability, catalyzing interest in a select group of problems amongst those who address complex multi-faceted challenges in very particular ways.⁶³ Concerns have been expressed that a growing dependence on Foundation funding on the part of researchers working on the health problems of the global South is limiting external criticism of BMGF ideas and diminishing the Foundation's own ability to engage in critical self-reflection.⁶⁴

⁶¹ Eric Holt-Gimenez, Miguel A. Altieri, and Peter Rosset, "Ten Reasons Why the Rockefeller and the Bill and Melinda Gates Foundation's Alliance for Another Green Revolution Will Not Solve the Problems of Poverty and Hunger in Sub-Saharan Africa," *Food First Policy Brief* no. 12 (October 2006): 1-11.

⁶² David McCoy, Gayatri Kumbhavi, Jinesh Patel, and Akish Luintel, "The Bill & Melinda Gates Foundation's Grant-Making Programme for Global Health," *The Lancet* 373, no. 9675 (2009): 1645-1653.

⁶³ Kirstin R.W. Matthews and Vivian Ho, "The Grand Impact of the Gates Foundation," *European Molecular Biology Organization (EMBO Reports)* 9, no. 5 (2008): 409-412.

⁶⁴ Donald G. McNeil, "WHO Official Criticizes Gates Foundation 'Cartel' on Malaria Research," *The New York Times* (February 18, 2008), accessed March 6, 2008. <http://www.nytimes.com/2008/02/18/health/18iht-gates.1.10134837.html>

Critical health scholars such David McCoy and Lindsey McGoey, also call into question the logic of the Foundation's expressed preference for subsidizing the development of novel, high-tech and high-risk solutions, as opposed to scaling up existing low-tech approaches proven to work, or offering direct support for strengthening the anemic public health sectors of the world's poorest countries.⁶⁵ Furthermore, by funding media investigations into particular topics of interest to the Foundation, concerns have been raised by journalists that BMGF's material resources are being inappropriately used to broaden public support for the Foundation's foci.⁶⁶

Finally, major concerns also center on BMGF's material resources being used to advance single issue-focused, informal approaches to collective action, which are seen to be undermining the authority of WHO.⁶⁷ It is now well established that BMGF endowment provides the Foundation with greater purchasing power than that made available by the world's states to WHO.⁶⁸ In light of this reality, BMGF's expressed volition to shape international policy has been perceived by some, as an egregious attempt by a single unelected private actor,⁶⁹ to usurp authority from those mandated by the world's states to coordinate international efforts to strengthen agriculture and control disease: the specialised agencies of the UN.⁷⁰ At a minimum, such critics argue, BMGF activities heighten the challenges of coordinating the diverse array of actors seeking to influence outcomes in the international policy arena, contributing to further fragmentation in the overcrowded international health architecture, which has experienced a dramatic proliferation of vertical initiatives, new actors and resources over the decade since BMGF became an active player in global health. At worst the Foundation is undermining the legitimacy of traditional IOs,

⁶⁵ David McCoy and Lindsey McGoey. "Global Health and the Gates Foundation: In Perspective," in *Partnerships and Foundations in Global Health Governance* (New York: Palgrave Macmillan, 2011).

⁶⁶ Sandi Doughton and Kristi Heim, "Does Gates Funding of Media Taint Objectivity?" *Seattle Times* (February 19, 2011), accessed April 8, 2011.

http://seattletimes.nwsourc.com/html/localnews/2014280379_gatesmedia.html

⁶⁷ Oeva Ollila, "Global Health Priorities—Priorities of the Wealthy?" *Globalization and Health* 1, no. 6 (2005): 1744-8603.

⁶⁸ Todd Faubion, Sarah B. Page and Amber L. Pearson, "Co-Opting the Global Health Agenda: The Problematic Role of Partnerships and Foundations in Perspective," in *Partnerships and Foundations in Global Health Governance*, eds., Simon Rushton and Owain Williams (New York: Palgrave Macmillan, 2011), 212-214.

⁶⁹ Simon Rushton and Owain Williams, "Private Actors in Global Health," in *Partnerships and Foundations in Global Health Governance*, eds., Simon Rushton and Owain Williams (New York: Palgrave Macmillan, 2011), 18.

⁷⁰ Donald G. McNeil, "WHO Official Criticizes Gates Foundation 'Cartel' on Malaria Research," *The New York Times* (February 18, 2008), accessed March 6, 2008. <http://www.nytimes.com/2008/02/18/health/18iht-gates.1.10134837.html>

already neglected by their official members, all the while operating with comparatively limited transparency and accountability for the influence it exerts.⁷¹

2.5 Conclusion

Historically, scholars examining RF's influence in world politics have portrayed the Foundation as an enabler of innovation in science used to strengthen public health,⁷² and agriculture,⁷³ and committed to building public sector capacity in these two domains,⁷⁴ across the global South. Liberals have characterized the Foundation as a global force which has used its resources to promote inclusivity and institutionalist principles within the society of states, playing a key role the realization of international organizations in, the interwar,⁷⁵ and post-war periods,⁷⁶ and later alternative governance frameworks such as CGIAR that intended to improve and supplement the interstate system's existing capacity to meet the needs of low-income countries.⁷⁷

In the neo-liberal era, RF's ability to engage both civil society and industry has made the Foundation in the eyes of liberal scholars well placed to bring historically reluctant parties together,⁷⁸ and these meetings have led to the forging of global networks,⁷⁹ comprised of diverse actors whose unique strengths have been employed for the benefit of the world's poorest people.

The limited number of scholars which have analyzed BMGF through a liberal lens have posited, that like RF, BMGF occupies a unique space at the intersection of public, private and third sectors which has been capitalized upon to bring prospective partners together,⁸⁰ and catalyze the formation of formal partnerships, such as the Global Alliance for Vaccines

⁷¹ McCoy, Kembhavi, Patel and Luintel; Rushton and Williams, 2011: 18-19; and McCoy and McGoey, 152; 156.

⁷² Downs; Taylor and Taylor.

⁷³ O'Toole, Toenniessen, Murashige, Harris, and Herdt.

⁷⁴ See for example Ma, Hewa, and Cotter.

⁷⁵ Dubin.

⁷⁶ Staples.

⁷⁷ Baum.

⁷⁸ Muraskin, *The Politics of International Health*.

⁷⁹ Moran, "Philanthropic Foundations."

⁸⁰ Moran, "Private Foundations."

and Immunization,⁸¹ which has served as the template for a series of informal global alliances composed of public and private actors working for the world's poorest people.⁸²

Liberals assert that BMGF's entry into agricultural development has ensured the continuation of RF's innovative approaches to strengthening both public and private sector agricultural capacity in Sub-Saharan Africa.⁸³ Moreover, liberals suggest that its willingness to work directly with industry has meant that the trend of privately-held intellectual property being availed to aid those with limited purchasing power continues.⁸⁴

In sharp contrast, critical scholarly analysis of RF and BMGF has been united by a view that the Foundations serve as vehicles for advancing technocratic, positivist and liberal-economic world-views within institutions of public policy. Historical analyses undertaken by those using a neo-Gramscian lens have portrayed RF as an extension of a transnational capitalist elite,⁸⁵ whose primary function has been to provide acceptance and stability for the world's historic bloc.⁸⁶ In the last decade, however, a small number of researchers focusing on global health partnerships have begun to recognise RF and BMGF as discrete actors in world politics.⁸⁷ Nevertheless, much of this contemporary scholarship, which is almost exclusively focused on BMGF, continues to employ a critical perspective in the analysis. While not explicitly neo-Gramscian, this emerging body of literature nonetheless shares many of its defining features (i.e. placing emphasis on the apparent contradictions of the Foundation's origins and goals): its affiliations with Northern states and MNCs and a perceived unwillingness to challenge the structural determinants of the problems they seek to address.⁸⁸

⁸¹ Muraskin, *Crusade to Immunize*.

⁸² Okie.

⁸³ Toenniessen, Adesina and DeVries.

⁸⁴ Paarlberg, *Starved For Science*.

⁸⁵ Moran, *Private Foundations and Development Partnerships: American Philanthropy and Global Development Agendas* (New York: Routledge, 2013).

⁸⁶ See, for example, Arnove; and Robert Arnove and Nadine Pinede, "Revisiting the 'Big Three' Foundations," *Critical Sociology* 33, no.3 (2007): 389-425.

⁸⁷ See, for example, Moran, "Philanthropic Foundations," 129; 123-125.

⁸⁸ McCoy and McGoey, 161.

Indeed, the limited number of explicitly global governance scholars who have looked at the influence of RF and BMGF in the new millennium have done so through a critical lens, voicing many of the same concerns critical scholars have been expressing over the past three decades. These include, for example, that through PPPs, RF and BMGF are creating parallel elitist structures of decision-making, which challenge multilateral organizations authority, and that the Foundations' efforts to legitimize the role of corporations in global governance via PPPs provide business interests with new avenues of influence in arenas of public policy. In this light, RF and BMGF continue to represent a power elite committed to embedding ideas into institutions of global governance that advance the interests of said elite, setting agendas that traditional multilateral organizations have no choice but to follow.⁸⁹

⁸⁹ Benedicte Bull, Martin Boas and Desmond McNeill, "Private Sector Influence in the Multilateral System," *Global Governance* 10, no.4 (2004): 481-98; Peter Utting, "Corporate Responsibility and the Movement of Business," *Development in Practice* 15, no. 3/4 (2005): 375-388; Benedicte Bull and Desmond McNeill, *Development Issues in Global Governance: Public-Private Partnerships and Market Multilateralism* (New York: Routledge, 2007); Ann Zammit, *Development at Risk: Rethinking UN-Business Partnerships* (Geneva: UNRISD, 2003).

Chapter 3: Re-organizing existing theory to explain the agency of RF and BMGF

3.0 Introduction

The purpose of this chapter is to demonstrate how existing theories of private governance and knowledge power can be tied together in a novel way to explain the agency of the Rockefeller Foundation (RF) and the Bill and Melinda Gates Foundation (BMGF) in global governance. The chapter first shows how RF and BMGF have direct relevance to the evolving concept of private governance due to their role in facilitating a number of arrangements focused on the provision of public goods, which have been crafted to include the participation of private actors, including but not limited to for-profit entities. I then show that their ideational influence has direct relevance to the social constructivism and the concept of knowledge power, drawing specifically on the theories of structuralism, functionalism, neo-functionalism, and the concept of the epistemic community.

While the contributions of this study are not first and foremost theoretical in nature, the blending of existing theories of power nonetheless constitute a form of “disruptive innovation,”¹ in that pre-existing materials are being used to provide a novel explanation for a still highly contested issue.² The two foundations, I argue, have gained influence in the governance of global public health and agricultural development, through the subsidization of science-enabled innovation, the construction of epistemic networks, and the development of roadmaps for collective action built to accommodate state preferences and the distribution of power in prevailing world orders. By shaping how global problems are understood and addressed, they have attained influence that is discursive, instrumental, and structural.

¹ Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Boston: Harvard Business School Press, 1997).

² Anonymous interviewee (RJ), June 8, 2011.

3.1 The rise of private power in global governance

As a perspective on the distribution of power in world politics, global governance has effectively illuminated the increasing authority conferred by states to private actors in pursuit of resolving complex problems.³ This rise in private power is closely linked to the unprecedented level of interdependence associated with the global expansion of the liberal economic paradigm.⁴ The ensuing “uncoupling” of territorialism has diminished individual state capacity to limit domestic exposure to external problems.⁵ To compensate for the shortcomings of the Westphalian model in the globalization era, states have relinquished long-held responsibilities to private actors, who now play key roles in establishing and enforcing regulatory frameworks governing whole industries, and in facilitating the provision of public goods.⁶ While still contentious, the argument that some degree of private participation in global governance is necessary, for collective action problems to be successfully resolved,⁷ has been widely embraced by states and international organizations alike.

In this section, I look at how existing literature examining the means through which private actors have become formally involved in the construction and management of institutions of global governance can explain the influence of RF and BMGF in world politics.

³ Alice Ba and Matthew Hoffmann, eds., *Contending Perspectives on Global: Coherence and Contestation* (New York: Routledge, 2005).

⁴ Jan Aart Scholte, *Globalization: A Critical Introduction* (New York: Palgrave MacMillan, 2005).

⁵ Susan Strange, *The Retreat of the State: The Diffusion of Power in the World Economy* (Cambridge: Cambridge University Press, 1996)

⁶ J. Rosenau and E.O. Czempiel, eds., *Governance without Government* (Cambridge: Cambridge University Press, 1992).

⁷ See for example John G. Ruggie, “Reconstituting the Global Public Domain: Issues, Actors and Practices,” *European Journal of International Relations* 10, no. 4 (2004): 499-531; Klaus Schwab, “Global Corporate Citizenship: Working with Governments and Civil Society,” *Foreign Affairs* 87, no. 1 (2008): 107-118.

Non-state actors increasingly shape the discourse and agendas of collective action, giving credence to James N. Rosenau's idea of a "post-international world."⁸ Evidence of this can be seen in the growing body of literature examining the emergence and institutionalization of forms of private governance.⁹ Private governance arrangements typically refer to either sector-specific private regulatory regimes managed by firms and business associations, or public-private partnerships (PPPs), within which private and often for-profit entities play a role in the development, production or delivery of public goods—roles traditionally associated with public authorities, namely states and multilateral institutions.¹⁰

The proliferation of these arrangements begs the question as to whether they are undermining the authority of states, thereby giving rise to the neo-medieval world envisioned by Hedley Bull.¹¹ Certainly in the neo-liberal era, states have been purposefully conferring authority to firms, not because they have to, but because of an ideological conviction that private sector specialists are generally more efficient than public sectors at addressing complex problems.¹² While ideological convictions have informed RF and BMGF's work in health and development, both have shown a clear commitment to strengthening public sector authority by bringing private resources (capital, technology, knowledge, etc.) to bear on complex problems where such help has been, urgently needed.

Much of the private governance literature has focused on regulatory authority conferred to firms by states.¹³ Private regulatory regimes occur when states allow firms to govern the

⁸ James N. Rosenau, "Global Governance as Disaggregated Complexity," in *Contending Perspectives on Global Governance*, eds., Matthew J. Hoffman and Alice. D. Ba (London: Routledge, 2005), 259.

⁹ See for example Claire Cutler, Virginia Haufler and Tony Porter, *Private Authority and International Affairs* (New York: University of New York Press, 1999); Rodey Bruce Hall and Thomas J. Biersteker, *The Emergence of Private Authority in Global Governance* (Cambridge: Cambridge University Press, 2002); Robert Falkner, "Private Environmental Governance and International Relations: Exploring the Links," *Global Environmental Politics* 3, no. 2 (2003): 72-87; Benedicte Bull, Martin Boas and Desmond McNeill, "Private Sector Influence in the Multilateral System," *Global Governance* 10, no.4 (2004): 481-98; Kent Buse and Kelley Lee, "Business and Global Health Governance," *World Health Organization*, Discussion Paper No. 5 (Geneva: WHO, 2005), 1-41; and Doris Fuchs, "The Commanding Heights?: The Strength and Fragility of Business Power in Global Politics," *Millennium* 33, no. 3 (2005): 771-802.

¹⁰ Ruggie, "Reconstituting the Global."

¹¹ Hedley Bull, *The Anarchical Society: A Study of Order in World Politics* (New York: Columbia University Press, 1977).

¹² See, for example, Jennifer Clapp, "Privatization of Global Environmental Governance: ISO 14000 and the Developing World," *Global Governance* 4 (1998): 295-316.

¹³ See, for example, Clapp, "Privatization of Global"; A. Claire Cutler, "Private International Regimes and Interfirm Cooperation," in *The Emergence of Private Authority in Global Governance*, eds., Rodey Bruce Hall and

domains within which they themselves operate, alleviating states of the burden of developing and implementing standards and the day-to-day tasks of assuring private sector compliance.¹⁴ These governance arrangements are not entirely private, in that states and to a lesser degree International Organizations (IOs) confer on them both legitimacy and legal status, as is the case with both the Forest Stewardship Council and the International Organization for Standardization certification.¹⁵ Nevertheless the innovative capacity of firms is a form of power, for it allows business to establish the parameters of what is technologically feasible for addressing problems they themselves have played a role in creating, as evidenced by the debates leading up to the Montreal Protocol on the international use of Chlorofluorocarbons (CFCs).¹⁶

Certainly the autonomy of firms as global governors has been questioned; should they prove ineffective in their assumed governance roles and/or jeopardize national interests, states have the capacity to constrain their actions and recall any authority ceded to them.¹⁷ Nonetheless concerns abound within this literature that the creation of private regimes draws power in a unidirectional flow away from states to firms, prioritizing the interests of unaccountable corporate capital over the public good, while at the same time eroding the public-private distinction and with it public sector legitimacy.¹⁸

The literature on private governance is thus overwhelmingly focused on the power of for-profit entities, which RF and BMGF clearly are not. Relevant to this study is the fact that RF and BMGF, like firms, have been recognized by states for their technical expertise and support of science-enabled innovation oriented towards providing solutions to complex global problems. In her work on non-traditional sites of authority, Susan Strange

Thomas J. Biersteker (Cambridge: Cambridge University Press, 2002), 23-40; and Phillip Pattberg, "What Role for Private Rule-Making in Global Environmental Governance?" *International Environmental Agreements* 5, no. 1 (2005): 175-189.

¹⁴ Karsten Ronit and Volker Schneider, "Global Governance Through Private Organizations," *Governance* 12, no. 3 (1999): 243-66; and Falkner, "Private Environmental."

¹⁵ Falkner, "Private Environmental."

¹⁶ Falkner, "The Business of Ozone Layer Protection: Corporate Power in Regime Evolution," in *The Business of Global Environmental Governance*, eds., David L. Levy and Peter J. Newell (Cambridge, Mass: MIT Press, 2005), 105-134.

¹⁷ Louis W. Pauly, "Global Finance, Political Authority, and the Problem of Legitimation," in *The Emergence of Private Authority in Global Governance*, eds., Rodey Bruce Hall and Thomas J. Biersteker (Cambridge: Cambridge University Press, 2002), 76-90.

¹⁸ Cutler, 34.

emphasized the importance of elites in defining the dominant discourse. In contrast to formal regimes and international organizations established by states, Strange noted the importance of “indirect authority,” such as economic or scientific entities, which create the domain-specific frameworks within which other actors, including states, are forced to work.¹⁹

As will be demonstrated, both RF and BMGF embody the indirect authority outlined by Strange, which has been achieved through the same discursive, instrumental and structural power Doris Fuchs has argued firms employ to shape public policy.²⁰ While discursive power refers to an ability to successfully define or “frame” problems and advance norms and ideas that in turn shape solutions, instrumental power describes the lobbying strength of actors dependent on others to see their goals realized. Neither RF nor BMGF possess the ability to create institutions and impose the rules and operational frameworks of the governing system, as only states have the authority to institutionalize ideas. This does not however preclude states inviting the Foundations or the epistemic communities they support, from creating rules or operational frameworks that once institutionalized others must follow, nor does it suggest that global research trajectories cannot be set via capital, for RF and BMGF have attained influence this way. Power acquired through knowledge construction is thus indirect and akin to the authority that firms have derived from self-regulatory regimes sanctioned by states. Accordingly, this study builds directly on the work of Strange, Fuchs and others,²¹ illuminating the indirect authority of a not-for-profit, philanthropic but still very private type of actor.

3.2 Private power through the provision of public goods

While less developed than the literature examining regulatory authority conferred to firms by states, a second body of literature on private governance exists that has focused on the private influence in global governance stemming from participation in PPPs: arrangements

¹⁹ Strange, *States and Markets* (London: Pinter Publishers, 1988); Jennifer Clapp and Peter Dauvergne, *Paths to a Green World: The Political Economy of the Global Environment* 2nd ed. (Cambridge, MA: MIT Press, 2005).

²⁰ Fuchs; Doris Fuchs and Marcus Lederer, “The Power of Business,” *Business and Politics* 9, no. 3 (2007).

²¹ Jennifer Clapp and Doris Fuchs, “Agrifood Corporations, Global Governance and Sustainability: A Framework for Analysis,” *Corporate Power in Global Agrifood Governance*, eds., Jennifer Clapp and Doris Fuchs (Cambridge: MIT Press, 2009), 3.

within which private actors voluntarily take on some level of responsibility for facilitating access to public goods. Typically this means ensuring that the necessary research and development, product financing and delivery, or issue-advocacy occurs. Allowing for-profit entities to assume these roles remains a contentious issue because traditionally they have been held by organizations lacking a profit motive, be they states, multilateral institutions and more recently Civil Society Organizations (CSOs).²²

There are proponents of PPPs,²³ who assert that partnerships should by no means be viewed as mechanisms through which the private sector is replacing the public sector. Instead they function as a means of filling gaps created by a lack of will and/or material or technological capacity exhibited by public authorities.²⁴ Northern states have therefore encouraged the growth of PPPs in global health and agricultural development for the same reasons they have sanctioned the growth of private regulatory schemes in their own backyards: to bring private expertise and resources to bear on the myriad of complex problems which public authorities—Northern aid donors, Southern aid recipients or traditional IOs charged with policy coordination—have failed to address themselves.²⁵

To date, much of the scholarly interest around partnerships has been critical in orientation. Critics have argued PPPs undermine the legitimacy of public institutions by providing firms with a means of profiting from the production and sale of what have historically been public goods and threaten the inter-state multilateralism upon which UN has been centered.²⁶ Arguments have been made that the rise of PPPs has led to a reduction in transparency of process, evidenced by the fact that while particular partnerships such as the Global Fund to

²² Ruggie, “Reconstituting the Global.”

²³ See, for example, Sandrine Tesner, *United Nations and Business: A Partnership Revisited* (Basingstoke: Macmillan, 2001); Jane Nelson, *Building Partnerships: Cooperation between the United Nations System and the Private Sector* (New York: United Nations, 2002); Ruggie, “The Theory and Practice of Learning Networks: Corporate Social Responsibility and the Global Compact,” *Journal of Corporate Citizenship* 5 (2002): 27-36.

²⁴ Ruggie, “Reconstituting the Global.”

²⁵ Benedicte Bull, Martin Boas and Desmond McNeill, “Private Sector Influence in the Multilateral System,” *Global Governance* 10, no.4 (2004): 481-98

²⁶ Peter Utting, *UN-Business Partnerships: Whose Agenda Counts?* (Geneva: UNRISD, 2000); Judith Richter, “*We the People*” or “*We the Corporations*”? *Critical Reflections on UN-business “Partnerships*,” (Geneva: IBFAN/GIFA, 2003); Ann Zammit, *Development at Risk: Rethinking UN-Business Partnerships* (Geneva: UNRISD, 2003); and Benedicte Bull, “The Global Elite, Public-Private Partnerships and Multilateral Governance,” in *Global Governance, Poverty and Inequality*, eds., Rorden Wilkenson and Jennifer Clapp (New York: Routledge, 2010).

Fight AIDS, TB and Malaria (hereafter the Global Fund) rely on public authorities such as the World Health Organization (WHO) for funding and administrative support, as legally independent not-for-profits, they are not required to have the same high levels of transparency or oversight as their public sector benefactors.²⁷ Other PPPs created to raise and disperse large funds for specific purposes such as the Global Alliance for Vaccines and Immunization (GAVI) have been criticized for distorting the policy objectives of their public authority hosts (e.g. UNICEF), while fragmenting agencies at the operational level.²⁸ The most cynical assessments suggest that PPPs constitute a misguided institutional experiment, which firms have strategically embraced to stifle civil society driven criticisms over their role in perpetuating global inequalities.²⁹

This dissertation shows that RF and BMGF have been instrumental in the evolution and institutionalization of the PPP as a form of global governance in public health and agriculture. This story is important, for the partnership paradigm is increasingly the standard approach being employed to address a wide variety of challenges across the development spectrum. The evidence presented in the thesis will show that RF has been a pioneer in attempting to fill gaps created by states and markets, a role BMGF has, from its inception, sought to emulate. The two foundations have worked to advance partnerships in the spheres of health and agriculture to compensate for the reduction in public sector capacity driven by neo-liberal ideology and the failure of the free-market to provide needed public goods.³⁰ I argue that the partnership model developed by RF and expanded by BMGF is therefore an attempt to *correct for* the shortcomings of neo-liberalism, not, as critics suggest, a strategy to undermine the authority of public authorities in pursuit of advancing the power of market actors.

²⁷ Shepard Forman and Derk Segaar, "New Coalitions for Global Governance: The Changing Dynamics of Multilateralism," *Global Governance* 12, no. 2 (2006): 205-225.

²⁸ Bull, Boas and McNeil.

²⁹ Sherri Brown, "Private Authority and Global Health Governance: Public-Private Partnerships and Access to HIV and AIDS Medicines in the Global South," (PhD diss., McMaster University, 2012), accessed June 23, 2013 <http://digitalcommons.mcmaster.ca/opensdissertations/6839>

³⁰ Joseph E. Stiglitz and Scott J. Wallsten, "Public-Private Technology Partnerships: Promises and Pitfalls," *American Behavioral Scientist* 43, no. 1 (1999): 35-51.

Strong public-sector organizations have been pivotal for the Foundations to achieve their goals. As will be demonstrated, RF's legacy has been in developing innovative approaches to strengthening public sector capacity to ensure the availability of public goods, wholly consistent with private governance as envisioned by the likes of Ruggie.³¹ The PPP paradigm is merely RF's most recent adaptation to shifts in the character of the world order in pursuit of this longstanding goal. BMGF has wholeheartedly embraced the paradigm and expanded its application via its comparatively larger material resources. The rise of PPPs in global health and agricultural development serve as evidence that these two foundations are capable of shaping not only the ideas and norms informing collective action related to addressing public health and hunger, but also the rules and institutions governing the coordination of such action.

Because the PPP paradigm rose to prominence as an approach to addressing health disparities, much of the early scholarship on the trend towards partnerships has been carried out by scholars of global health politics.³² Yet as noted by Moran,³³ with a few exceptions,³⁴ the central roles played by RF and BMGF in the construction and institutionalization of global health partnerships has been largely overlooked by this community. This observation applies equally to the broader literature assessing how NGOs, business actors and hybrid models of global governance are affecting the international public policy process.³⁵

³¹ Ruggie, "Reconstituting the Global."

³² See, for example, Ilona Kickbusch, "The Development of International Health Policies—Accountability Intact?" *Social Science and Medicine* 51 (2000): 979-989; Kent Buse and Gill Walt, "Global Public-Private Partnerships: Part I—A New Development in Health," *Bulletin of the World Health Organization* 78, no. 4 (2000): 549-561; Kelley Lee, *Globalisation and Health: An Introduction* (Basingstoke: Palgrave Macmillan, 2003).

³³ Michael Moran, *Private Foundations and Development Partnerships: American Philanthropy and Global Development Agendas* (New York: Routledge, 2013).

³⁴ See, for example, Roy Widdus and Katherine White, *Combating Diseases Associated with Poverty* (Switzerland: Initiatives for Public-Private Partnerships for Health and Global Forum for Health Research, 2004), 1-30; William Muraskin, *Crusade to Immunize the World's Children: The Origins of the Bill and Melinda Gates Children's Vaccine Program and the Birth of the Global Alliance for Vaccines and Immunizations* (Los Angeles: USC Marshall BioBusiness Initiative, 2005); Buse and Lee; Benedicte Bull and Desmond McNeill, *Development Issues in Global Governance. Public-Private Partnerships and Market Multilateralism* (New York: Routledge, 2007); and Simon Rushton and Owain Williams, eds., *Partnerships and Foundations in Global Health Governance* (New York: Palgrave Macmillan, 2011).

³⁵ Richard Price, "Transnational Civil Society and Advocacy in World Politics," *World Politics* 55, no. 4 (2003): 579-606.

3.3 Knowledge Construction and Power

If RF and BMGF are indeed uniquely positioned to shape global governance, then why have these two actors largely operated under the radar of scholars examining the rise of private governance arrangements? Certainly the UN classification of private philanthropic foundations, as non-governmental organizations,³⁶ is not the cause of their being viewed largely as peripheral actors, for Multinational Corporations (MNCs)—which have attracted tremendous scholarly attention—are also categorized as such. Instead, I am suggesting that the reason RF and BMGF have not attracted more scrutiny from International Relations (IR) scholars has to do with the intangibility and invisibility of power attained through the construction of knowledge,³⁷ which I argue has been and continues to be the basis of their influence in global governance.

The premise that knowledge and power cannot be easily separated is by no means novel.³⁸ In *The Structure of Scientific Revolutions*, Thomas Kuhn convincingly demonstrated that scientific knowledge in particular is never neutral and can in fact serve as the basis for entry into elite circles.³⁹ Certainly the World Bank's ability to define "development," and how it is measured,⁴⁰ serves to illustrate that technical expertise can be a gateway to knowledge construction and influence over global public policy. Accordingly, this section examines how IR theory has addressed the topic of knowledge as the basis of power.

3.31 Constructivism

As an approach to the study of power in the world order, social constructivism posits that it is ideational factors, not material ones, which are most important in shaping how we collectively approach big problems. From this perspective, power that hinges on the ability

³⁶ The UN's exceedingly broad definition of an NGO also include such diverse entities as Transnational Corporations (TNCs), civil society, trade and research organizations: see for example Michele Betsill and Elisabeth Corell, eds., *NGO Diplomacy: The Influence of Nongovernmental Organizations in International Environmental Negotiations* (Cambridge: MIT Press, 2008), 4.

³⁷ Strange, *States and Markets*, 115.

³⁸ Michel Foucault, *Power/Knowledge*, trans., Colin Gordon (New York: Pantheon, 1980); Karen Litfin, *Ozone Discourses* (New York: Columbia University Press, 1994).

³⁹ Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: The University of Chicago Press, 1970).

⁴⁰ Michael Barnett and Martha Finnemore, *Rules for the World: International Organizations in Global Politics* (Ithaca: Cornell University Press, 2004).

to embed ideas and beliefs is certainly less tangible than economic or military might, but it is in fact more important for dominant ideas to inform to what end material forces are employed in problem solving.⁴¹ Moreover, ontological, causal, and principled beliefs are all important in terms of defining for states the realm of the possible, how to achieve their goals, and what is right and what is wrong from a normative standpoint. Ideas and beliefs thus serve as “roadmaps” that set agendas and illuminate certain possible courses of action while excluding others. Furthermore, once embedded within institutions, ideas and beliefs become difficult to remove and may continue to influence policy formulation, long after their normative and causal foundations have shown to be flawed.⁴² In this vein, constructivists suggest that emphasis should be placed on looking at which ideas emerge as relevant and which do not, how such ideas emerge, how they become institutionalized, and how their institutionalization matters.⁴³

This study is constructivist in its questions related to how the formulation and dissemination of ideas can be a source of power, as well as in its findings that RF and BMGF’s ability to influence collective action resolves around the framing of debates and persuading states to embrace particular norms and ideas.⁴⁴

3.32 Structuralism

While constructivists have placed emphasis on the potential power *of* ideas, structuralists have emphasized power *over* ideas. According to Robert L. Paarlberg, for example, the basis of the United States’ longstanding economic and military hegemony stems directly from its

⁴¹ Michael Barnett and Robert Duvall, “Power in International Politics,” *International Organization* 59, no.1 (2005): 39-75.

⁴² Judith Goldstein and Robert Keohane, *Ideas and Foreign Policy: Beliefs, Institutions, and Political Change* (Ithaca: Cornell University Press, 1993); Alexander Wendt, “Why a World State is Inevitable,” *European Journal of International Relations* 9, no. 4 (2003): 491-542; and Shepard Forman and Derk Segaar, “New Coalitions for Global Governance: The Changing Dynamics of Multilateralism,” *Global Governance* 12, no. 2 (2006): 205-225.

⁴³ Martha Finnemore and Kathryn Sikkink, “Taking Stock: The Constructivist Research Program in International Relations and Comparative Politics,” *Annual Review of Political Science*. 4 (2001): 391; 405.

⁴⁴ See, for example, Lloyd Axworthy, *Navigating a New World—Canada’s Global Future* (Toronto: Alfred A. Knopf, 2003); Joseph S. Nye, *Bound to Lead: The Changing Nature of American Power* (New York: Basic Books, 1990); Anne Marie Slaughter, “Disaggregated Sovereignty: Towards the Public Accountability of Government Networks,” *Government and Opposition* 39, no. (2004): 159-90; John Donnelly, *International Human Rights*, 3rd ed. (Boulder: Westview Press, 2006).

fiercely guarded technological dominance in the second half of the twentieth-century.⁴⁵ Its ability to control access to knowledge giving rise to technological innovation is at the core of its longstanding dominance in world affairs.

However, knowledge structures are not only about controlling access to information. Whereas knowledge refers to the sum total of what is known about a particular issue, in organizational contexts, the knowledge structure refers to how such knowledge is attained. Three basic schemes for ordering knowledge inform the knowledge structure of any particular field: (i) declarative knowledge (i.e. how and why things work the way they do); (ii) procedural knowledge (i.e. the required steps to address a particular challenge; and (iii) structural knowledge (i.e. the organizational frameworks guiding these efforts).⁴⁶

For Strange, the production and dissemination of knowledge was one possible pathway to attaining structural power in the world order,⁴⁷ and this research provides evidence to support that argument. As Timothy Sinclair has effectively demonstrated with American bond-rating agencies, the capacity to determine what information is important for solving complex problems and what is not, or put another way, what should be kept the same and what should change, can provide non-state actors with tremendous authority that is not immediately obvious but is real nonetheless.⁴⁸

3.33 Functionalism and Neo-functionalism

The idea that specialized knowledge alone may serve as the basis of power in international relations is rooted in the theory of functionalism. Emerging from the aftermath of WWII, functionalists correctly predicted that challenges of interdependence would increasingly be

⁴⁵ Robert L. Paarlberg, "Knowledge as Power: Science, Military Dominance, and U.S. Security," *International Security* 29, no. 1 (Summer 2004): 122-151.

⁴⁶ See, for example, David H. Jonassen, Katherine Beissner and Michael Yacci, *Structural Knowledge: Techniques for Representing, Conveying, and Acquiring Structural Knowledge* (Hillsdale: L. Erlbaum, 1993), 3-4.

⁴⁷ For her discussion of the other three pathways to structural power (security, finance, and production), see Strange, *States and Markets*, 30.

⁴⁸ Timothy J. Sinclair, *The New Masters of Capital: American Bond Rating Agencies and the Politics of Creditworthiness* (Ithaca: Cornell University Press, 2005).

addressed through cooperation between apolitical technocrats working out of IOs raising the influence of those organizations in world affairs.⁴⁹

Neo-functionalism, for example,⁵⁰ broadened this thinking by correctly observing that technocratic influence over collective action would not be limited to those working out of the IOs, which functionalists anticipated as being the future centers of global governance. Acknowledging this extension beyond the realm of the public sphere was significant because it foreshadowed the relevance of non-state actors to the formation of global networks seeking to shape public policy.

Yet “experts” are by no means a homogeneous group. Functionalists, for example,⁵¹ premised their assumptions on expert consensus, which Karen Litfin has since shown, rarely exists on complex issues because of the discursive nature of knowledge.⁵² Instead, attaining knowledge power is contingent on demonstrating the utility of *particular* ways of understanding problems. As will be demonstrated, from its inception in the second decade of the twentieth-century, RF worked incessantly to build and expand networks of particular disciplinary scientific experts (e.g. physicians, molecular biologists, agricultural economists, etc.) within and across borders, which proved to be pivotal for ensuring ideas that the Foundation espoused came to shape policy in domestic contexts where they operated and in international institutions they helped create. Such epistemic expansion continues through the grant making of BMGF today, although the Foundation places far less emphasis on it than its institutional forebear, which I argue reduces its potential influence in policy arenas.

3.34 *Epistemic communities*

The epistemic community concept, closely associated with Peter Haas, builds on functionalism and neo-functionalism as a theory on the power implications of specialized knowledge. Epistemic communities are united by common sets of ideas and principled

⁴⁹ Kenneth W. Thomson, *Ethics, Functionalism, and Power in International Politics* (Baton Rouge: Louisiana State University Press, 1979); Litfin, 41.

⁵⁰ See, for example, Ernst B. Haas, *Beyond the Nation State* (Stanford: Stanford University Press, 1964).

⁵¹ See, for example, David Mitrany, *The Functional Theory of Politics* (New York: St. Martin's Press, 1975).

⁵² Litfin, 41.

beliefs, including causal beliefs to a central set of problems under scrutiny, notions of validity, and a commitment to common prescriptive policy enterprises.⁵³

The epistemic community concept is important to this project for two reasons. The first reason is that it articulates that disciplinary training plays an important role in setting parameters for discussions on determinants of problems, the range of solutions considered and ideas of who is best equipped to address challenges based on the validity of their knowledge. The second reason is that it highlights that shared knowledge acquired through experience plays a key role in shaping the normative beliefs people employ to understand the world around them.⁵⁴ Epistemic communities are thus composed of those who share common worldviews, frameworks of ideas and beliefs through which individuals interpret and interact with the world.⁵⁵

As noted by Emanuel Adler and Steven Bernstein, to date, much of the work on epistemic communities has looked at attempts to institutionalize science-based epistemes,⁵⁶ and this study does not deviate from this path. Despite the heterogeneity of ideas emanating from RF in its one hundred year old history, science-enabled innovation and the construction and expansion of scientific epistemic communities have been central to its influence in global health and agricultural development. And while BMGF has thus far not followed suit in epistemic community-building per say, it has placed an even stronger emphasis on science-enabled innovation and on underwriting the development of new technologies intended to benefit the world's poor and historically marginalized.

This shared commitment to science as a way of understanding and responding to health and agricultural challenges has been a source of enduring criticism for RF and BMGF. Many of their critics are united by their belief that for both foundations, science is not simply an

⁵³ Peter Haas, "Introduction: Epistemic Communities and International Policy Coordination," *International Organization* 46, no. 1 (1992): 1-35.

⁵⁴ Emanuel Adler and Steven Bernstein, "Knowledge in power: the epistemic construction of global governance," in *Power in Global Governance*, eds., Michael Barnett and Robert Duvall (Cambridge: Cambridge University Press, 2005), 295-6; Robert Wuthnow, *Communities of Discourse* (Cambridge: Harvard University Press, 1989).

⁵⁵ Clément Vidal, "Wat is een wereldbeeld? (What is a worldview?)," in *Nieuwheid Denken: De Wetenschappen en het Creatieve Aspect van de Werkelijkheid*, eds., H. Van Belle and J. Van der Veken (Leuven: Press Acco, 2008).

⁵⁶ Adler and Bernstein, 301.

approach to understanding problems but instead the basis of a positivist worldview (scientism) built on the assumption that the only legitimate knowledge, or at least the most authoritative, is that acquired through observation and experimentation. At the core of these concerns is the argument that science is a social institution that ignores socio-political determinants of problems.⁵⁷ From this vantage point, any efforts to empower scientists and institutions of science will only work against progressive change by de-emphasizing the need to address the structural determinants of global inequality underlying the public health threats and agricultural challenges such technocrats are charged with resolving.

Concern over the Foundations' empowerment of epistemic communities centers on the argument that rational choices are subjective choices,⁵⁸ for what is "rational" to some (e.g. framing food insecurity as a product of lack of access to technology or market access) is most irrational to others. Haas, like David Mitrany before him, premised his assumptions on expert consensus, which as previously noted can by no means be assumed since knowledge is shaped by a variety of experiences.⁵⁹ Epistemic lenses can serve to limit the range of ways of understanding and responding to problems. While the worldviews of RF leadership have been far from static, they have nonetheless played an important role in determining which epistemic communities the Foundation has empowered and the type of governance mechanisms they have created and sustained. This observation appears to have even greater relevance to the leadership of BMGF today.

Critical constructivists, for example,⁶⁰ assert that only a select few have the ability to define what is and what is not important, thus engaging in social construction,⁶¹ and this project reinforces this assertion. Certainly as selective grant-makers, RF and BMGF bring new meaning to Litfin's concept of "knowledge brokers"; those government intermediaries positioned between sources of knowledge and institutionalizing agents who have the resources to advance knowledge that is framed in ways that support a particular worldview

⁵⁷ Richard Lewontin, *Biology as Ideology: The Doctrine of DNA* (Concord: House of Anasi Press, 1991).

⁵⁸ Alexander Wendt, "Driving the Rearview Mirror: On the Rational Science of Institutional Design," in *The Rational Design of International Institutions*, eds., Barbara Koremenos, Charles Lipson and Duncan Snidal (New York: Cambridge University Press, 2004), 259-289.

⁵⁹ Litfin, 41.

⁶⁰ See, for example, Foucault; Litfin; and Peter Utting, ed., *Reclaiming Development Agendas: Knowledge, Power and International Policy Making* (Basingstoke: Palgrave MacMillan, 2006).

⁶¹ Finnemore and Sikkink, "Taking Stock," 398.

or agenda.⁶² Due to the Foundations' comparatively small size and the latitude often afforded to program officers and directors within the Foundations, RF and BMGF have provided individuals with structural power that is difficult to imagine in large public sector bureaucracies.

Moreover, as networks working towards the institutionalization of specific norms or policies, prominent members of epistemic communities are often needed to coordinate, fund and spearhead global campaigns. These so-called norm or policy entrepreneurs provide both visibility and credibility to particular ideas up for consideration, a great benefit to their associated networks given the very competitive global ideational realm.⁶³ Not only have RF and BMGF proven themselves as creators and sustainers of epistemic networks and organizations on numerous issues, high-profile employees have also played the role of norm entrepreneur. Bill Gates Jr. exemplifies such celebrity diplomacy, for example,⁶⁴ in his willingness to draw on his fame to garner political support for his Foundation's initiatives.

Haas has faced criticism for limiting his conceptualization of epistemic communities to technocratic groups focused on shaping interstate cooperation.⁶⁵ Haas' critics are correct in that transnational civil society driven epistemic communities can derive power outside of the state/inter-state context: for example, by working at the societal level to embed new norms through appeals to individual emotions, thereby changing societal culture.⁶⁶ This study differentiates itself from Haas' work through its illumination of the relationship between the empowerment of epistemic communities in global governance and private, non-state forms of transnational authority. Having said that, the larger contribution of Haas' work on the Mediterranean Action Plan was to demonstrate that epistemic communities are unable to

⁶² Litfin, 4.

⁶³ Finnemore and Sikkink, "International Norm Dynamics and Political Change," *International Organization* 52, no. 4 (1998): 887-917; Steven Bernstein, *The Compromise of Liberal Environmentalism* (New York: Columbia University Press, 2001).

⁶⁴ Andrew F. Cooper, *Celebrity Diplomacy* (Boulder: Paradigm, 2007).

⁶⁵ Paul Wapner, *Environmental Activism and World Civic Politics* (Albany: SUNY Press, 1996), 67; Ole Jacob Sending, *The Formation and Transformation of a Transnational Field* (Berkeley: Center for Culture, Organization and Politics, 2009), 3.

⁶⁶ Wapner; Margaret E. Keck and Katheryn Sikkink, *Activists Beyond Borders: Advocacy Networks in World Politics* (Ithaca: Cornell University Press, 1998); Ruggie, "The Theory and Practice."

institutionalize their normative enterprises autonomously.⁶⁷ To translate the ideas and norms they espouse into any kind of structural influence, states must grant them permission to retool the institutional machinery, which RF in particular has been able to take advantage of at various points in its history. Institutionalizing ideas and normative enterprises at the global level therefore requires convincing those controlling the levers of power to buy into the utility of the proposed ideas.⁶⁸

3.35 Agency Through Adaptation to Power Asymmetries

If governance frameworks are to fulfill their intended purpose, they must be sufficiently acceptable to those with the capacity to undermine their effectiveness. RF and BMGF have clearly understood that knowledge structures for overcoming global health and agricultural challenges need to take into consideration the distribution of power in the world order. While states, IOs, MNCs, CSOs and communities are all “stakeholders,” asymmetries in political power mean that some stakeholders are of greater importance for the long-term success of the Foundations’ plans than others. For the Foundations’ strategies to be institutionalized, they must thus accommodate—or at least not be seen as challenging or undermining—the preferences of the most powerful actors operating within the contexts where attempts at change are being undertaken. In the context of the neo-liberal world order, the most powerful political and economic actors have been Northern states and MNCs.

According to David Mosse, an organization can maintain its definition of a problem, provided that groups of actors with vested interests in seeing the dominant narrative maintained exist to justify its definition of the problem.⁶⁹ RF and BMGF have required such “interpretive communities” to advance their ideas—whether those of Northern and Southern states, firms, or IOs—and their strategies have reflected this need. This has meant for example not openly questioning the development priorities of many low-income

⁶⁷ Peter Haas, “Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control,” *International Organization* 43, no. 3 (1989): 377-403; Ruggie, 1998.

⁶⁸ Haas, 1989; John G. Ruggie, *Constructing the World Polity: Essays on International Institutionalization*. New York: Routledge, 1998.

⁶⁹ David Mosse, “Is Good Policy Unimplementable? Reflections on the Ethnography of Aid Policy and Practice,” *Development and Change* 35, no. 4 (2004): 639–671.

countries where they have operated, despite there being good reason do so. This has also meant not openly contesting the rules of a liberal economic order,⁷⁰ despite evidence that those rules (e.g. governing access to intellectual property) have exacerbated the vast disparities in the global distribution of resources and wealth. While the promotion of strategies deemed beneficial to marginalized populations is integral to their character as political actors, with a few exceptions, activism is not. For RF and BMGF to influence outcomes, they need more powerful actors within their network to buy into their framing of problems, adopt their solutions, and in some instances, confer rule-making authority—in effect, granting them the privilege of private governorship.

The changes in RF's knowledge structures for global health and agricultural development over time, I argue, are reflective of the organization's ability and willingness to adapt to shifts in externally imposed parameters. While a commitment to science-enabled innovation has remained constant, for example, with the rise of neo-liberalism, RF's emphasis on epistemic expansion waned to adapt to cuts in public sector expenditures resulting from the imposition of structural adjustment policies. While operational programs and country level initiatives were reduced, the Foundation began to actively solicit corporate involvement in collective action and develop governance models around such participation.

This does not mean however that RF has simply worked to support the status quo. In fact, this dissertation makes the opposite argument. Certainly partnerships have given firms agenda-setting power in global governance. Yet they have also been vehicles for embedding new norms within corporate culture regarding the roles and responsibilities of firms in society, and catalysts for bringing new resources to bear on challenges in need of resources. Yet as will be demonstrated, the PPP paradigm is just the latest example of RF's capacity to adapt to changes in the world order, for their policy influence pre-dates the era of embedded liberalism.

⁷⁰ Ruggie, *Constructing the World*.

3.4 Conclusion

The purpose of this conclusion is to tie together the approaches introduced throughout the chapter to create a novel framework that explains the unique power of the Rockefeller and Gates Foundations in the governance of global health and agricultural development.

To begin, constructivists and structuralists alike have emphasized that the capacity to construct and disseminate knowledge is an important although often overlooked pathway to power in world politics. As will be demonstrated in the empirical chapters, RF and BMGF embody the non-state technocratic influence shaping debates over collective action anticipated by neo-functionalists and the indirect authority described by Strange.

This dissertation will show that throughout the twentieth-century, the RF has been a discrete source and vehicle for advancing new ideas and norms within the world order and has repeatedly generated the requisite political will to address, however imperfectly, global disparities. It has accomplished this by fostering epistemic communities within and across states, building support for their unifying ideas through demonstrations of their effectiveness. Indeed, constructing epistemic communities has been critical to the norms and ideas guiding RF's work in attaining credibility in both domestic and international policy making arenas.

Science-enabled innovation and epistemic expansion have provided the Foundations and their associated epistemic communities with *discursive* and *instrumental* power within policy-making settings, and with structural power in their able to orient global research trajectories. This power is also displayed by the fact that states have repeatedly embrace RF's ideational blueprints for novel global strategies oriented towards addressing complex problems.

The knowledge structures which RF, and more recently BMGF have developed—which feature so prominently in how we collectively address complex health and development challenges today—have been accepted by the dominant powers where they operate because they have been adapted to accommodate prevailing distributions of power.

In any given context, the distribution of political and economic power is always unequally distributed. The empirical evidence that will be presented in this dissertation shows that RF's longevity as an actor of influence in global governance is rooted in its ability to successfully adapt its strategies to be sufficiently palatable to the dominant political establishment without compromising its end goals. By not contesting the legitimacy of the overall system, RF has been afforded opportunities to affect changes to the norms and institutions guiding that system.

This willingness to innovate around political and economic power disparities has meant that time and time again, sets of ideas emanating from these private actors have become the institutional frameworks of public organizations within which the same communities of experts and their associated assumptions and approaches become embedded and perpetuated. Accordingly their preference for accommodation over contestation has been instrumental to the Foundations attaining power in the governance of global health and development.

Litfin has argued that the major caveat on power acquired through expert knowledge is that experts cannot replace the existing political process.⁷¹ Yet this argument does not diminish the fact that by developing alternative governance frameworks deemed to be sufficiently palatable to those with the power to institutionalize ideas at the international level (e.g. states), both RF and BMGF have demonstrated themselves to be catalysts of innovation in governance. Innovation in science, coupled with innovation in governance, has provided RF and BMGF and their associated epistemic communities with discursive, instrumental and structural power, which the epistemic communities literature has not yet taken note of.

Moreover, in recent years, considerable weight has been placed on the ability of actors to work within an informal and decentralized network structure, for example,⁷² for meaningful influence in global governance to be achieved.⁷³ The Foundations' willingness to engage with

⁷¹ Litfin, 31.

⁷² Manuel Castells, "Global Governance and Global Politics," *Political Science and States* 38 (2005): 9-16.

⁷³ See, for example, Keck and Sikkink; Slaughter; and Jan Martin Witte, Wolfgang H. Reinicke, and Thorsten Benner, "Beyond Multilateralism: Global Policy Networks," *International Politics and Society* 2 (2000): 176-88.

all relevant actors needed to solve complex problems embodied by the PPP paradigm, demonstrating that RF and BMGF have an established capacity for creating and sustaining decentralized and non-hierarchical global policy networks. This capacity for network-building and informal diplomacy, and willingness to work around the preferences of the most powerful actors, underlies their enabling role of semi-private governance arrangements focused increasing access to public goods that fulfill their purpose in the neo-liberal era.

These arguments lend credence to critical constructivists' claims that powerful groups play a privileged role in the process of social (knowledge) construction.⁷⁴ That the Foundations' ideas are a product of their historical context is in fact consistent with critical theory as an approach to understanding structural change, as is this project's goal of providing explanation for how particular structures of power arise and change over time.⁷⁵ Having said that, little evidence has been found to support an argument that the Foundations' institutional progeny serve as "ideational structures of domination," which critical constructivist theory might otherwise suggest.⁷⁶ Furthermore, as will be shown in the coming chapters, the evidence gathered does not support the historical materialist argument that the dominant ideas and norms shaping global governance first and foremost reflect the interests of, and provide legitimacy to, the capitalist class.⁷⁷ Instead, it will be demonstrated that the institutional innovations advanced by the Rockefeller and Gates Foundations have been designed to compensate for governance gaps created by states and markets in both the North and the South, and as such constitute examples of agency through adaptation.

⁷⁴ Finnemore and Sikkink, "Taking Stock."

⁷⁵ Bernstein, *The Compromise of Liberal*, 4; Robert W. Cox, "Globalization, Multilateralism, and Democracy," (The ACUNS 1992 John W. Holmes Memorial Lecture, Providence, 1992), 3. Accessed: June 15, 2013 http://acuns.org/wp-content/uploads/2012/09/WebpageCox_GlobalizationMultilateralismandDemocracy.pdf

⁷⁶ Finnemore and Sikkink, "Taking Stock"; Anthony Giddens, *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis* (Los Angeles, University of California Press, 1979).

⁷⁷ Robert W. Cox, *Production, Power, and World Order: Social Forces in the Making of History* (New York: Columbia University Press, 1987); Stephen Gill, ed., *Gramsci, Historical Materialism and International Relations* (Cambridge: Cambridge University Press, 1993); Bernstein, *The Compromise of Liberal*, 13-14.

Chapter 4: RF and The Progression To Global Health Governance

4.0 Introduction

This chapter provides an overview of the Rockefeller Foundation's (RF's) efforts to shape the organization of efforts to promote and protect population health¹ in developing countries since its establishment a century ago. I argue that the Foundation's strategies to influence health governance have consistently been crafted with consideration for the preferences of the dominant actors operating within the political and temporal contexts where it has sought to catalyze change. As an organization, RF achieved longevity as an agent of change because of its capacity to adapt and stay relevant across three very different world orders.

The chapter first examines the Foundation's emergence as a child of the progressive era, when its initial network and institution building efforts within and across the global South (from 1910 to the 1930s) was focused on individual developing country states in the process of emerging from the clutches of colonialism. In this context, RF's effective illumination of the potential of science to address longstanding public health challenges served as one of two gateways through the Foundation attained policy-making influence at the country-level.

Examples of such science-enabled innovation included the first yellow fever vaccine, developed by Max Theiler at the Rockefeller Institute for Medical Research in New York city, as well as the successful eradication of the world's most competent malaria vector, *Anopheles gambiae*, from Brazil in the 1930s. Much of the Foundation's efforts in science-enabled innovation in this era embodied a biomedical view of public health and emphasized the embrace of new technologies. Nevertheless, the health unit model developed in Sri Lanka, which focused on population health research, primary care and preventative medicine, serves to illustrate that RF was by no means a monolithic entity in this period.

¹ Richard Dodgson, Kelly Lee, and Nick Drager, *Global Health Governance: a Conceptual Review* (Geneva: WHO, 2002), accessed May 11, 2009. http://whqlibdoc.who.int/publications/2002/a85727_eng.pdf

The second gateway to policy influence occurred through the construction of epistemic communities in the public sectors through the provision of advanced training. The chapter shows that the immediate post-colonial period was the golden era of RF's efforts to forge epistemic communities in public health at the country-level. This was accomplished by creating post-secondary schools of public health in over sixty countries and providing thousand of fellowships for physicians and scientists to pursue graduate degrees at North American institutions.

In the immediate post-colonial period, RF capitalized on individual developing country governments' expressed volition to strengthen indigenous capacity to protect public health. By demonstrating how science-enabled innovation could be employed to address longstanding public health challenges, and offering to subsidize and in many cases oversee advanced training to the future public health elite of individual countries, RF was able to ensure its ideas for improving public health were embraced within national policy making arenas.

I subsequently show that during the broadening of state support for international cooperation (1930s to 1970s), RF played a key role in enabling the creation of specialized International Organizations (IOs) yet continued to identify and fill new gaps, thereby ensuring sustained relevance. This ranged, for example, from serving as the primary benefactor for the League of Nation's Health Organization (LNHO), the short-lived predecessor of the World Health Organization (WHO), to orchestrating and underwriting informal public sector networks such as the International Clinical Epidemiology Network (INCLIN).

The chapter then turns to the neo-liberal era (1980s to present), where I show how RF has been a global innovator in governance at the private-public interface. RF's diplomatic initiatives, I argue, have provided opportunities for informal dialogue between relevant although often distrustful stakeholders. It has nurtured the construction of novel strategies and institutional frameworks such as the Children's Vaccine Initiative (CVI), designed to address state and market failures disproportionately affecting the world's marginalised. It was an early champion of Public-Private Partnerships (PPPs) geared towards product

development. Beginning with the International AIDS Vaccine Initiative (IAVI) in 1996, PPPs have become the dominant strategy for closing state-market gaps in the face of reductions in public sector financing and multi-lateral aid and the rising policy influence of Multinational Corporations (MNCs). The PPP approach, I argue, works to accommodate countries such as the United States that have worked to globalize neo-liberal ideology because of their capacity to derail global initiatives seen as threatening their interests.

While chapter 4 and 5 draw heavily from the existing RF historiography, key informant interviews with individuals closely associated with the Foundation provide new perspectives on the ideas guiding the Foundation's work and the strategies employed to advance those ideas across the three different temporal periods. The principal contribution of this chapter (and that of chapter 5) is to provide a generalizable explanation of RF's sustained agency in the governance of public health and agricultural development from its inception to the present. For while RF's focus has shifted over time from individual nation states, to the society of states, to most recently the power structure of a global society, this chapter demonstrates that RF's initial commitment to strengthening public sector capacity to promote and protect public health has remained unchanged.

4.1 The Progressive Era - the Immediate Post-Colonial Era

The early twentieth-century was for RF a period of determining and illuminating how science-enabled innovation could help overcome longstanding public challenges in poor countries, and of forging epistemic communities in the countries where they worked. Through building institutions of higher education across the developing world, the Foundation was largely successful in its attempt to reproduce within developing countries a group of scientific and medical elite guided by the same progressive era thinking that was reshaping how public health was conceptualized and practiced within the United States, where the Foundation was born.

RF was a child of the progressive era, a period of cultural and social reform in the United States, which lasted from approximately from 1890 until the late 1930s. Progressives included many prominent industrialists, educators, political leaders and scientists, who

expressed a commitment to the eradication of corruption, minimizing physical and monetary waste, advancing the entrepreneurial spirit, increasing opportunity for education in the applied sciences, and embracing technology for the betterment of societal welfare.²

John Davison Rockefeller (JDR), the founder, President and major shareholder of the Standard Oil Company, which at its peak controlled 90 percent of the United States' oil refining capacity, was one of these individuals. Two events are credited with triggering Rockefeller's transition from business leader to philanthropist. The first was his reading of steel magnate Andrew Carnegie's 1889 essay, *The Gospel of Wealth*. In his essay, Carnegie, who himself gave away over US\$350 million for the construction of universities, libraries and hospitals, sought to dissuade America's business elites from passing on their wealth to their offspring through inheritance, or giving it away through open-ended donations to charitable organizations. Instead, Carnegie believed entrepreneurs should instead reinvest their accumulated capital for the common good through targeted philanthropy while maintaining control over how their monies were spent.³ Rockefeller's first philanthropic undertaking occurred that same year as the first of series of contributions that would eventually total \$35 million supporting the establishment of the University of Chicago.⁴

The second trigger of the Rockefeller revolution was Standard Oil's forced break in 1906, after being deemed in violation of a series of anti-trust acts introduced in the 1890s to limit the scope and holding companies assets. While no longer America's Captain of industry, Rockefeller was nonetheless the world's wealthiest individual, with a net worth of approximately US\$900 million, equal at that time to two percent of the United States GDP.⁵

Rockefeller's interest in subsidizing Science Enabled Innovation (SEI) was spurred by Frederick T. Gates, a former Baptist Minister, who in 1891 became JDR's principal aide and advisor.⁶ Gates espoused a deep and unwavering faith in the capacity of medical science to

² R. Hofstadter, *The Age of Reform: from Bryan to FDR* (New York: Knopf, 1955).

³ David Rothkopf, *Superclass: The Global Power Elite and the World They Are Making* (New York: Farrar, Straus, and Giroux, 2008), 100-102.

⁴ Ron Chernow, *Titan: the Life of John D. Rockefeller Sr.* (New York: Warner Books, 1998), 121.

⁵ Rothkopf, 101-110.

⁶ John Farley, *To Cast Out Disease: A History of the International Health Division of the Rockefeller Foundation (1913-1951)* (Oxford; New York: Oxford University Press, 2004), 3.

overcome disease,⁷ which he viewed as “the main source of almost all other human ills—poverty, crime, ignorance, vice, inefficiency, hereditary taint, and many other evils.”⁸

For Gates, improvements in public health were predicated upon sustaining the revolutionary advances in clinical medicine (i.e. anatomy, physiology, chemistry and bacteriology) and therapeutic options (e.g. morphine)⁹ driven by the likes of Pasteur, Koch and Lister in the late 19th century.¹⁰ This would mean, in Gates’ view, adopting the German model of medical education, with its standardized curriculum delivered by full-time faculty members integrating laboratory-based research into formal medical education.¹¹

Gates’ fervent belief in the capacity of medical science to improve public health is significant because it contrasted sharply with evidence accrued during the industrial revolution that improvements in the health of populations were being driven not by clinical or technological innovation but by improvements to social conditions (e.g. improved housing, hygiene, nutrition and education) made possible by economic growth and the redistribution of income.¹² By systematically investigating and mapping the sources of mortality, assuring access to services such as the provision of safe drinking water and waste collection, and collecting public health data in the form of vital statistics,¹³ governments in Western Europe and North America were demonstrating in practice the veracity of Rudolph Virchow’s claim that “*Medicine is a social science, and politics is nothing else but medicine on a large scale.*”¹⁴

Gates’ interest in improving health however lay not in social reform but in medicine, which led him to seek out medical educators, such as William Welch of John Hopkins Medical

⁷ Qiusha Ma, “The Peking Union Medical College and the Rockefeller Foundation’s Medical Program’s in China,” in *Rockefeller Philanthropy and Modern Biomedicine: International Initiatives from World War I to the Cold War*, ed., William H. Schneider (Bloomington, Indiana: Indiana University Press, 2002), 162.

⁸ Raymond B. Fosdick, *The Story of the Rockefeller Foundation* (New York: Harper & Brothers, 1952), 23-24.

⁹ Amy Staples, *The Birth of Development: How the World Bank, Food and Agriculture Organization, and World Health Organization Changed the World, 1945–1965* (Kent: Kent State University Press, 2006), 123.

¹⁰ Il’ia Il’ich Mechnikov, *The Founders of Modern Medicine: Pasteur, Koch, Lister* (New York: Walden, 1939).

¹¹ Staples, 125.

¹² Kelley Lee, *The World Health Organization (WHO)* (Routledge: New York, 2009), 6.

¹³ See, for example, Anthony Brundage, *The English Poor Laws, 1700-1930* (Houndmills: Palgrave, 2002); William Coleman, *Death is a Social Disease: Public Health and Political Economy in Early Industrial France* (Madison: University of Wisconsin Press, 1982); George Rosen, *A History of Public Health* (New York: MD Publications, 1958).

¹⁴ L. Eisenberg, “Rudolf Virchow: the Physician as Politician,” *Medicine and War* 2, no.4 (1986): 243–250.

School,¹⁵ and Simon Flexner, from the University of Pennsylvania,¹⁶ to help advance his agenda of strengthening the United States' capacity for medical research, in large part by increasing the number of trained experts and institutions of research. Gates' emphasis on expertise as the gateway to improved health, links him to the "efficiency movement," a particular ideological byproduct of the progressive era. Its adherents firmly believed that "experts" were, by virtue of their expertise, better equipped than generalist bureaucrats to effectively manage large societal problems such as hunger and disease, and as a consequence should have greater responsibility in the overall management of such problems.¹⁷

With JDR as benefactor, John D. Rockefeller Jr. as committed heir, and Gates as architect, a century of "scientific giving" was initiated under the Rockefeller banner. Their primary foci were on enabling scientific innovation to be applied to intractable problems and the expansion of a technocratic elite to carry out this work.¹⁸ The Rockefeller philanthropic organizations that would have a profound impact on the practice of public health both in the United States and internationally included the General Education Board (GEB) established in 1903, the Rockefeller Sanitary Commission (RSC) in 1909, the actual RF in 1913 and the International Health Commission and China Medical Board (CMB), which were established in 1914.¹⁹ Because of their overlapping mandates, the majority of the Foundation's sibling-organizations were eventually consolidated under RF banner.²⁰ However all of the associated Rockefeller organizations have been defined by their commitment to innovation in science,

¹⁵ Marilyn Baily Ogilvie, "The Rockefeller Foundation, China, Western Medicine, and PUMC," in *Philanthropy and Cultural Context: Western Philanthropy in South, East, and Southwest Asia in the 20th Century*, eds., Soma Hewa and Philo Hove (Lanham: University Press of America, 1997).

¹⁶ E. Richard Brown, *Rockefeller Medicine Men: Medicine and Capitalism in America* (Berkeley: University of California Press, 1979).

¹⁷ Samule P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement 1890-1920* (Cambridge: Harvard University Press, 1959).

¹⁸ Lilly E. Kay, *The Molecular Vision of Life: Caltech, the Rockefeller Foundation, and the Rise of the New Biology* (New York: Oxford University Press, 1993), 8, 17; Kenneth Prewitt, "American Foundations: What Justifies Their Unique Privileges and Powers," in *The Legitimacy of Philanthropic Foundations: United States and European Perspectives*, eds., Kenneth Prewitt, Mattei Dogan, Steven Hydermann, and Stefan Toepler (New York: Russell Sage Foundation, 2006), 29.

¹⁹ Waldemar A. Nielsen, *The Big Foundations* (New York: Columbia University Press, 1972).

²⁰ Robert E. Kohler, *Partners in Science: Foundations and Natural Scientists, 1900-1945* (Chicago: University of Chicago Press, 1991), 243. For a group of individuals committed to efficiency, this was a particularly inefficient arrangement. Accordingly, between 1925 and 1928 the Rockefeller philanthropies were re-structured, with the CMB spun off into a stand alone entity and GEB merged into RF resulting in a single entity comprised of five divisions: 1) Medical Science; 2) the International Health Division (IHD); 3) Natural Sciences; 4) Social Sciences; and 5) the Humanities.

the advancement of science, and associated institutional and individual capacity building.²¹

The first initiative displaying this commitment to innovation through science was the creation of the Rockefeller Institute for Medical Research (RMIR), established in 1901.²² Renamed Rockefeller University in 1965,²³ RMIR is widely seen as the paragon upon which the United States National Institutes of Health (NIH) was modeled.²⁴

RIMR was followed by the launch of the GEB in 1903. The GEB's initial focus was on facilitating access to and improving higher education in the United States and is credited by critics and proponents alike with catalyzing the transformation of country's approach to medical education within a decade of its establishment.

In 1910, educator Abraham Flexner's highly influential report, commissioned by the Carnegie Foundation, was released. "The Flexner Report" called for systematic reforms to how medicine and public health were taught in American universities and associated research conducted. Specifically, Flexner advocated standardizing admission criteria and the duration of studies, hiring salaried professional instructors with individual research portfolios, and incorporating schools of medicine into established universities.²⁵ In 1913 Flexner was appointed to RF's board and to that of the GEB the following year. Acting on Flexner's recommendation, the first US\$1.5 million of what would eventually total US\$10 million was granted to establish full-time teaching positions at the Johns Hopkins Medical School, the model upon which all other schools would be compared.²⁶ Subsequent grants were made to institutions across the United States and around the world on the condition of their embracing the Hopkins template.²⁷

²¹ Anonymous interviewee 1, November 19, 2010.

²² Ogilvie, 24.

²³ Farley, 3.

²⁴ Anonymous interviewee 2, January 18, 2011

²⁵ Abraham Flexner, *Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching*, Bulletin No. 4 (New York City: The Carnegie Foundation for the Advancement of Teaching, 1910).

²⁶ William H. Schneider, *Rockefeller Philanthropy and Modern Biomedicine: International Initiatives from World War I to the Cold War* (Bloomington: Indiana University Press, 2002), 9; Ogilvie, 24.

²⁷ Anonymous interviewee 2, January 18, 2011.

In 1906, Gates began to advocate that JDR establish an actual foundation. This advice was acted upon three years later when Rockefeller authorized the transfer of 73,000 shares of Standard Oil stock to the his son John Rockefeller Junior, Gates and Harold McCormick: RF's first trustees. Valued at US\$50 million, JDR's initial contribution was intended to be the first installment of an eventual US\$100 million endowment.²⁸

Initially, a federal charter was sought for the Foundation. However distrust over Rockefeller's intentions stemming from Standard Oil's monopolistic practices led the United States government to impose limitations on the Foundation's potential (e.g. that its endowment must never exceed 100 million) before its actual birth, which were ultimately deemed unacceptable. Consequently, a New York state charter was sought and granted in 1913.²⁹ The Rockefeller Foundation was established to promote "the well-being of mankind throughout the world," which its trustees envisioned would be accomplished through "the spread of the knowledge of scientific medicine,"³⁰ and in this regard, its impact was felt immediately. Within two decades of its inception, RF would become the single largest funding source for biomedical research and the development of public health programs in the world.³¹

4.11 Hookworm

The Foundation was quick to embark on influencing the practice of public health beyond the United States by building on the successes of the Sanitary Commission, which sought to eradicate hookworm from the southern United States through a combination of education, pharmaceuticals and improved sanitation. Long considered by states to be a critical

²⁸ Chernow, 563-566.

²⁹ Concerns over the material influence of private American Foundations are not new. RF was established in an era in which concern over the concentration of wealth among a small minority of individuals and firms was widespread. These concerns served as the basis of a series of Senate hearings (The Walsh Commission, held from 1913 to 1915), which investigated the implications of this capital accumulation, including the question as to whether private Foundations served to distract from it (Prewitt, "Foundations,"). See also Nielsen.

³⁰ Fosdick, 156-57. RF's reticence to directly engage the social and political determinants of problems under its scrutiny is often linked to an event that occurred in the year of its founding. In 1913, the National Guard killed 40 striking labourers at a Rockefeller controlled company (Colorado Fuel and Iron), which led to a US commission investigation over Rockefeller complicity with the use of force in order to end the labour dispute (Nielsen, 53-4; Farley, 220).

³¹ Brown, *Rockefeller Medicine*, 104.

impediment to economic development,³² hookworm is caused by a parasitic nematode that resides on the small intestine of its mammalian host. While typically not the cause of death in those infected, infections often result in anemia from loss of blood, which for pregnant women can lead to low birth weights and impede cognitive and physical development in children. Most infections are transmitted through the skin when individuals walk barefoot on warm soil contaminated with parasite-containing fecal matter. Hookworm is easily prevented by the construction of public sanitation systems, and where this does not exist by educating people to wear shoes and implementing community-based de-worming programs.³³

RSC's hookworm eradication efforts began in Virginia in 1910 and consisted of surveys to assess the prevalence of infection, treatment of infected individuals with thymol or chenopodium administered at local dispensaries, and demonstration programs showing the proper method of constructing outdoor privies.³⁴ Spearheaded by RSC director and educator Wycliffe Rose of University of Nashville, the program initially did not conform to the biomedical model envisioned by Gates, in that it was largely centered on education and sought to include all relevant stakeholders (i.e. physicians, public health, school and church health officials, and members of the business community and media).³⁵ The program's achievements are notable. Within four years across eleven states, over one million individual examinations had been conducted. Over forty percent of those examined were found infected and treated, and through education and improvements to sanitation, countless infections prevented.³⁶

RF's first health initiative outside of the United States was the establishment in 1914 of an International Health Commission (IHC),³⁷ which was intended as a vehicle for replicating

³² Anonymous interviewee 3, December 6, 2010.

³³ James Chin, ed., *Control Of Communicable Diseases Manual*, 17th ed. (Washington: American Public Health Association, 2000), 265-268.

³⁴ Farley, 29-33; Steven Palmer, "Toward Responsibility in International Health: Death following Treatment in Rockefeller Hookworm Campaigns, 1914-1934," *Medical History* 54 (2010): 149.

³⁵ Farley, 29.

³⁶ Ibid.

³⁷ IHC was re-named the International Health Board (IHB) in 1915, and finally the International Health Division (IHD) in 1927.

RSC's hookworm eradication efforts in other countries,³⁸ and taking on the task of controlling additional diseases.³⁹ That RSC was the template for IHC is significant because the Foundation has long been criticized for relying on technology to achieve positive change, and the Sanitary Commission's approach was by no means one-dimensional. While the program increasingly relied on antihelminthics over the five years it operated,⁴⁰ one of the most dominant ideas that came to inform RF's work was that technology is both a pre-condition for progressive change and the basis or justification for why change should occur but is not an end in itself.⁴¹

Concerns were raised early within the GEB about the sustainability of the hookworm eradication campaign; if the target population—poor rural agriculturalists—remained poor, then their poverty, if not addressed, translated into a weak tax-base, which hampered state government's abilities to pay for services such as public health and education.⁴² This contradiction spurred the GEB to initiate an agricultural program credited with catalyzing agricultural modernization in American South, which will be examined in detail in chapter 5. The biomedical paradigm would come to inform the majority of RF's public health initiatives in the first three decades of its existence, evidenced by the fact that four diseases (hookworm, yellow fever, malaria and TB accounted for ninety percent of IHD disease budget.⁴³ Yet despite the foundation's commitment to SEI that was conceived out of ideological fervour, from its inception considerable heterogeneity in how public health challenges could be approached was displayed in its operations, which critics have largely ignored.

It would appear IHC's efforts were, at first, largely unsolicited. As noted by Benjamin Page, RF's second President George Vincent aspired to export the Flexner model, thereby

³⁸ Marcos Cueto, "The Cycles of Eradication: the Rockefeller Foundation and Latin American Public Health, 1918-1940," in *International Health Organizations and Movements*, ed., Paul Weindling (Cambridge: Cambridge University Press, 1995), 223.

³⁹ Benjamin B. Page, "Evaluation and Accountability: with a Case Study of the Early Rockefeller Foundation," in *Philanthropic Foundations and the Globalization of Scientific Medicine and Public Health*, eds., Benjamin B. Page and David A. Valone (Lanham: University Press of America, 2007), 6.

⁴⁰ Farley, 31.

⁴¹ Anonymous interviewee 4, July 12, 2011.

⁴² Anonymous interviewee 3, December 6, 2010.

⁴³ Farley, 20.

institutionalizing scientific medicine in recipient countries despite a lack of official requests from prospective beneficiaries or studies demonstrating such a need.⁴⁴ Officially however IHC would only work in partnership with national governments after being invited to do so on the basis that public health protection was the responsibility of the state, meaning their operations in countries would be intended to catalyze public sector capacity strengthening and, to avoid creating situations of dependence, be of a limited duration.⁴⁵

The standard approach when such assistance was requested consisted of undertaking country-level health surveys and making recommendations on the needs of the population, underwriting post-graduate training of government health officials personnel in schools of hygiene the health division had helped create, and providing the template and seed funding for re-organizing national systems of public health.⁴⁶ As noted by Marcos Cueto, while such preliminary surveys provided valuable information to partner governments, it also served to strengthen RF's case of the need to re-structure how their public health systems were organized,⁴⁷ illustrating that science was integral to RF's discursive influence.

In the wake of RSC's successes, RF's first international hookworm eradication campaigns targeted societies administered by colonial governments, specifically British Guyana, Egypt, India, Ceylon (Sri Lanka) and the Malay states.⁴⁸ The campaigns were initiated in a period of optimism concerning the feasibility of the end-goal. By that time the epidemiology and life-cycle of the parasite was well understood, and the disease was proven to be both preventable (through education and the use of latrines) and relatively simple to treat given the existence of two effective antihelmintic drugs that were simple to administer,⁴⁹ though not without risk to recipients.⁵⁰

⁴⁴ Page, Benjamin B. "Evaluation and Accountability: with a Case Study of the Early Rockefeller Foundation." In *Philanthropic Foundations and the Globalization of Scientific Medicine and Public Health*. Edited by Benjamin B. Page and David A. Valone, 3-13. Lanham: University Press of America, 2007), 7.

⁴⁵ The Lancet, "The Rockefeller Foundation," *The Lancet* 209 (1927): 40]; Farley, 4.

⁴⁶ Farley, 37.

⁴⁷ Cueto, "The Cycles," 224.

⁴⁸ Farley, 62.

⁴⁹ Cueto, "The Cycles," 223.

⁵⁰ The scale of IHD's use of oil of chenopodium in its international hookworm campaigns was unprecedented and constituted the first mass use of a single therapeutic agent in public health. For while it proved largely effective, standards regarding safe dosage were by no means established. Between 1914 and 1934, when IHD

Despite these realities, all of these efforts ended in failure. Wycliffe Rose, who had transitioned from directing the Sanitary Commission to become IHC's inaugural director, had viewed hookworm as a device through which the Foundation could transform health systems.⁵¹ However as noted by Farley, Rose did not anticipate the unwillingness of the colonial governments to take on fiscal responsibility for the programs or develop the necessary infrastructure to curtail the spread of infection.⁵²

Similarly in India and Ceylon, where migrant labourers living in squalid conditions were deemed to be the primary vectors of the disease, plantation owners balked at incurring any financial costs associated with hookworm prevention, given the unlimited supply of cheap labour.⁵³ Consequently, the Foundation shifted its attention to independent states with expressed volitions for investing in their public health systems.

In total RF's global hookworm eradication campaign would involve sixty-two countries on six continents.⁵⁴ Yet, with a few exceptions, its goal of eliminating hookworm in these environments would remain elusive. This was due in no small part to the logistical challenges associated with maintaining standards of practice at the local level.⁵⁵ More importantly however was the pervasive systemic poverty limiting access to essential preventative measures such as shoes and latrines, which ensured the continuation of the cycle of infection. RF's lack of control over these crucial factors provided credence to the argument espoused by some within RF, including Rose's successor Paul Russell, that the Foundation should limit the scope of its disease control efforts to science-enabled innovation,⁵⁶ where it held a comparative advantage over other actors; with this in mind, it turned its attention to two additional diseases of global significance: yellow fever and malaria.

terminated its use, over 200 deaths associated with chenopodium intoxication were documented by Rockefeller field staff, more than 80 percent of which occurred in children under the age of thirteen (Palmer, 150).

⁵¹ Farley, 6.

⁵² Ibid., 65.

⁵³ Ibid., 67-72.

⁵⁴ Nielsen.

⁵⁵ Cueto, "The Cycles," 228.

⁵⁶ Farley, 82.

4.12 Yellow Fever & Malaria

Ironically it was Rose, the proponent of public health through educational and social reform, who initiated RF's technology-centered yellow fever and malaria programs. As noted by Farley, the challenge of controlling these diseases was far more daunting than that of hookworm, given effective therapeutic agents were lacking for both.⁵⁷ Moreover while Cuban physician Carlos Finlay had demonstrated thirty years prior that transmission of the disease could be arrested if the mosquito vector (*Aedes. aegypti*) was eliminated,⁵⁸ the actual causative agent had yet to be determined.⁵⁹

RF's yellow fever program was initiated in 1916. Over the course of its thirty-four year lifespan, it involved seventy-six staff at a total cost of US\$14 million, more than three times what was spent on any other disease by the international health division, which included the cost of constructing a dedicated laboratory at the RMIR in 1928.⁶⁰

The program led to a number of scientific breakthroughs, beginning with the first isolation of the yellow fever virus from a Ghanaian patient in 1927. At the RMIR South African microbiologist Max Theiler developed what became known as the Mouse Protection test, whereby antibodies identified in human sera conferred protective immunity to mice inoculated with the yellow fever virus intra-cerebrally, which allowed for retrospective diagnosis of yellow fever in humans and a means to map endemic areas.⁶¹

⁵⁷ Ibid., 88.

⁵⁸ Steven C. Williams, "Nationalism and Public Health: The Convergence of Rockefeller Foundation Technique and Brazilian Federal Authority during the Time of Yellow Fever, 1925-1930," in *Missionaries Of Science: The Rockefeller Foundation and Latin America*, ed., Marcos Cueto (Bloomington: Indiana University Press, 1994), 26.

⁵⁹ Farley, 88.

⁶⁰ Paola Mejia, "Of Mice, Vaccines and Men: The Yellow Fever Research Program of the Rockefeller Foundation in Columbia, 1932-48," in *Philanthropic Foundations and the Globalization of Scientific Medicine and Public Health*, eds., Benjamin B. Page and David A. Valone (Lanham: University Press of America, 2007), 76.

⁶¹ For the Mouse Protection and his role in developing the yellow fever vaccine, Theiler received the Nobel Prize for Medicine in 1951. For two in-depth historical and technical overviews of RF's virus program, see Wilbur G. Downs, "The Rockefeller Foundation Virus Program: 1951-1971 with Update to 1981," *Annual Review of Medicine* 33 (1982): 1-30; and Max Theiler, *The Arthropod-borne Viruses of Vertebrates: an Account of the Rockefeller Foundation Virus Program, 1951-1970* (New Haven: Yale University Press, 1973).

Following extensive serological testing in the subsequent decade,⁶² the first effective vaccine was developed in 1937 at the RMIR by Theiler, and initially produced by the Foundation itself having previously developed the capacity to produce influenza vaccine.⁶³ Since its development, over 400 million doses have been distributed, and amazingly this almost eighty-year old technology is still in use today.⁶⁴

Moreover, the yellow fever program led to the understanding that there were three distinct epidemiological cycles of the disease, one of which (the sylvatic cycle) meant that eradication was not possible.⁶⁵ The knowledge was not generated without mistakes made by RF, however, mistakes which undeniably cost lives. The Foundation's initial approach to controlling yellow fever, in Ecuador, Guatemala, Peru, Mexico and Brazil,⁶⁶ was predicated on the erroneous assumption that the disease was transmitted solely by competent mosquito vectors—notably *Aedes aegypti*—in urban centres where outbreaks typically occurred. RF field staff, who assumed responsibility for vector control from public authorities, emphasized reducing the breeding sources of these mosquitoes.⁶⁷ Yet when RMIR bacteriologist Hideyo Noguchi incorrectly identified the bacterium *Leptopira iceteroides* as the causative agent, the Foundation reduced its source reduction efforts to compensate for heightened lab-intensive work, leading to an increase in the population of urban vectors.⁶⁸ Following a large yellow fever epidemic in 1928 in Brazil, and the discovery in 1930 that their initial assumptions were incorrect,⁶⁹ relations between governments and the Foundation became strained and public support for the Foundation's role in public health protection diminished.⁷⁰ Despite these

⁶² Mejia, 78.

⁶³ Ibid.

⁶⁴ Downs.

⁶⁵ In the semi tropical and tropical forests of Sub-Saharan and Central and South America, where yellow fever is endemic, it is a zoonoses and primates are the natural reservoir (Chin, 554). While the mosquito vector which transmits the virus among primates do not feed on humans (Spielman, 54), those that feed on both primates and humans can serve as bridge vectors when human inadvertently encroach on the disease cycle as can occur for example due to logging in epizootic areas (Chin, 553). See Andrew Spielman, *Mosquito: A Natural History of our Most Deadly Foe* (New York: Hyperion, 2001).

⁶⁶ Marcos Cueto, ed., *Missionaries of Science: the Rockefeller Foundation and Latin America* (Bloomington: Indiana University Press, 1994), xii.

⁶⁷ Farley, 90.

⁶⁸ Ibid., 93-4.

⁶⁹ Ibid., 100.

⁷⁰ Williams, 27.

errors, RF's role in the advancement of knowledge regarding the control of yellow fever cannot be understated.

In contrast to RF developing and illuminating a viable generalizable strategy for developing countries to control yellow fever, the Foundation's efforts to improve government capacity to control malaria did prove to be unsustainable. As per hookworm, the Foundation's malaria eradication efforts were based on a template established within the United States in 1915, when the Sanitary Commission began working with the United States Public Service and state and local governments on malaria prevention demonstration projects across the Southern states.⁷² In the United States context, the approach was three-pronged, comprised of vector eradication in urban areas through mechanical spraying of chemical larvicides, promoting the screening of windows and doors, and in rural areas where vector eradication was impossible, distributing quinine.⁷¹

The first operational program was initiated in 1925 in Argentina in partnership with Argentina's National Department of Hygiene on the condition that it establish and operate a Bureau of Studies and Demonstrations in Malaria,⁷² which quickly expanded to several other countries. The adoption of screening and use of quinine proved impractical in that it required compliance on the part of the target population which field staff could not ensure, while quinine would ultimately prove ineffective as a malaria prophylactic.⁷³ Very quickly RF's malaria control program became entirely contingent on vector eradication via pesticides.⁷⁴

⁷² Malaria is caused by four species of a protozoan parasite of the genus *Plasmodium* (*P. vivax*, *P. malaria*, *P. Ovale*, and *P. falciparum*). Transmitted by mosquitoes of the Anopheles genus humans are the reservoir for malaria in humans. While global incidence and mortality have fallen significantly in the last decade, it remains the most important mosquito-borne disease from a population health standpoint in that it infects over 200 million people per year, causing over half a million deaths. Kenrad E. Nelson and Carolyn Masters William, eds., *Infectious Disease Epidemiology: Theory and Practice* (Gaithersburg: Aspen Pub. Inc., 2001): 675-76; World Health Organization, "Malaria Fact Sheet," no. 94 (January 2013), accessed November 1, 2012. <http://www.who.int/mediacentre/factsheets/fs094/en/index.html>

⁷¹ Farley, 112; Quinine is the active ingredient of cinchona bark; a tree indigenous to the Andes. Once used for malaria prophylaxis, it is still used to treat complicated cases (e.g. those that are drug resistant).

⁷² Cueto, "The Cycles," 234.

⁷³ Farley, 113.

⁷⁴ IHB initially relied on the larvicide Paris Green (comprised of copper acetate, copper arsenite, and road dust), which was dispersed by hand blowers. Developed by the USPHS, the mixture selectively targeted anopheline species. Beginning in 1944, however, DDT became IHD's chemical control of choice. For more on this see Farley, 112-113, 134.

Events in Brazil initially provided reason for optimism over the Foundation's approach. In 1930, one of the world's most effective malaria vectors *A. gambiae*—inadvertently imported by ship from West Africa—was discovered in the state of Rio Grande do Norte in the country's North-East. Despite driving a series of epidemics, including in 1938 the largest ever documented in the Americas with over one hundred thousand cases and over fourteen thousand deaths,⁷⁵ *A. gambiae* was successfully eradicated in Brazil by 1940 under the direction of RF's Fred L. Soper.⁷⁶

Yet the eradication of *A. gambiae* proved to be false hope in the Foundation's larger bid to eliminate malaria in the countries where they operated solely through vector control. Both the social factors (e.g. illiteracy, poverty and poor quality land) and ecological factors (e.g. sheer variety of vectors and associated traits) underpinning disease transmission proved insurmountable for RF and their state partners.⁷⁷ Unfortunately for the world, the Foundation's successes with yellow fever would not be replicated with malaria.

4.13 – Building Epistemic Communities At the Country-Level

RF's limited ability to successfully control particular diseases in the first three decades of its existence distracts from its ability to establish through training communities of experts sharing common ways of conceptualizing and addressing particular problems within all of the countries where they operated. It is significant that partner governments readily accepted RF's offers to subsidize advanced training of civil servants because of a common volition for strengthening public sector capacities in public health (and later in agricultural science). This is because the Foundation's ability to successfully define or "frame" problems (i.e. their discursive power) relied not only on its record of science-enabled innovation but also its ability to forge like-minded epistemic communities within the countries where it operated. Moreover its instrumental power revolved around the fostering of epistemic communities at

⁷⁵ Cueto, *Missionaries of Science*, xiii.

⁷⁶ Farley, 138.

⁷⁷ Socrates Litsios, "Selskar Gunn and Paul Russell of the Rockefeller Foundation: A Contrast in Styles," in *Philanthropic Foundations and the Globalization of Scientific Medicine and Public Health*, eds., Benjamin B. Page and David A. Valone (Lanham: University Press of America, 2007a), 48-49.

the country-level, for community members became decision-makers, who repeatedly embraced and institutionalized those frameworks being advanced by the Foundation.

Anne-Emanuelle Birn described RF's thirty year partnership with the Mexican government's Department of Public Health (DSP) as a "marriage of convenience," a marriage that united the Foundation's vision of improving human well-being via SEI with the Mexican government's goal of modernizing its country.⁷⁸ Yet the marriage of convenience is an apt descriptor for RF's partnerships in *all* of the countries where it operated.

By way of IHD's disease control initiatives, the Foundation provided more than six thousand fellowships between 1917 and 1950 for physicians and scientists to pursue graduate degrees at North American institutions modeled on the Johns Hopkins template,⁷⁹ and through operational programs within countries, advanced training for thousands of additional healthcare workers and engineers.⁸⁰ Over IHD's thirty-eight year lifespan, almost US\$100 million was spent on public health education and the creation of schools of public health in sixty-two countries.⁸¹ As noted by Farley, the basic premise of RF's epistemic expansion was that by endowing copies of the John Hopkins model across the global South, biomedical expertise and the research it would spurn would invariably strengthen both public health outcomes and public sector capacity to ensure such outcomes could be sustained.⁸²

By convincing partner governments to institutionalize the dominant American approach to public health and facilitating the training of both partner countries' future biomedical elite and front-line workers,⁸³ IHD served as a vehicle to embed an epistemic lens in both national public policy making apparatus and at the local level where public health professionals shaped public opinion and practice. Such epistemic expansions afforded the

⁷⁸ Anne-Emanuelle Birn, *Marriage of Convenience: Rockefeller International Health and Revolutionary Mexico* (Rochester: University of Rochester Press, 2006), 1-2.

⁷⁹ Cueto, "The Cycles," 225; William H. Schneider, 46.

⁸⁰ Birn, *Marriage of Convenience*, 2.

⁸¹ James S. Coleman and David Court, *University Development in the Third World: the Rockefeller Foundation Experience* (New York: Pergamon Press, 1993), 20.

⁸² Farley, 203.

⁸³ Mejia, 89.

Foundation both discursive and instrumental power which many have been critical given the shortcomings of particular ideas or approaches taken. However in spite of numerous short-term failures, RF's public capacity building also laid the groundwork for future gains which critics such as Birn and Cueto seem hesitant to acknowledge.

As noted by Soma Hewa, RF's hookworm program in Sri Lanka focused on Indian migrant workers—while unable to curtail the transmission of hookworm—it nonetheless provided a template that became the model for the public health system that today provides care for the majority of the country's population.⁸⁴ RF developed the country's local health unit model, a team-based model intended to serve approximately 80,000 people involving health inspectors, nurses, midwives, administrative staff and a primary care physician, also offering occasional dental, surgical and specialty coverage from staff based out of district hospitals. The units conducted the surveys which determined local needs and kept a record of vital statistics; allowed local communities and government participation in program planning; and through emphasis on sanitation, hygiene, vaccination, education, nutrition, maternal and child health, brought a preventative approach to public health that employed local resources to address local challenges.⁸⁵ While the national government was responsible for the construction and operating costs individual units, RF provided the template for a national training facility that become the National Institute of Health Sciences, and initially all training of the human resources, not only in Sri Lanka but also in India, Malaya and Burma.⁸⁶ For Hewa, the Health Unit Program of the IHB provided a template for how to achieve in practice, the future theoretical vision of “Health for All” through primary care articulated at Alma-Ata, and is inseparable from Sri Lanka having one of the strongest public health care systems in the global South today.⁸⁷

⁸⁴ Soma Hewa, “Globalizing Primary Care: Rockefeller Philanthropy and the Development of Community-Based Approach to Public Health in Sri Lanka – What Can We Learn?” in *Philanthropic Foundations and the Globalization of Scientific Medicine and Public Health*, eds., Benjamin B. Page and David A. Valone (Lanham: University Press of America, 2007), 59.

⁸⁵ *Ibid.*, 60.

⁸⁶ *Ibid.*, 63-4.

⁸⁷ *Ibid.*, 57, 64.

4.14 RF and public health from the progressive to the immediate post-colonial era: final thoughts

RF's initial health program was driven by the new science of germ theory, and the advances of Koch and Pasteur, which led many to believe that disease eradication was finally feasible. RF cultivated this belief and placed an emphasis on creating the means to do so through a network of institutions training health professionals and using a common curriculum informed by this cutting edge science. This was the basis of the Flexner revolution in the United States, which the Foundation's IHD, GEB, and the China Medical Board sought to replicate internationally.⁸⁸ As noted by Steven Wheatley, the re-organization of 1924 to 1928 marked the end of the Frederick T. Gates era, during which medical research was the number one priority and biomedical science was viewed as the gold standard for solving all complex health problems. The Foundation's initial paternalistic attitude towards the countries of the global South diminished and individual country governments came to be viewed as equal partners.⁸⁹ Moreover with the initial leadership cohort largely gone, more influence was granted to directors of the individual divisions.⁹⁰ This is not to say that an emphasis on facilitating partner countries' capacity to engage in SEI was diminished, only that preventive medicine and health systems strengthening were increasingly viewed as central to the achievement of both partners' long-term goals. As noted by James Coleman, these two seemingly competing norm complexes that were reflected in RF's operational programs continued to guide the Foundation's health initiatives long after the end of the progressive era within which they were forged.⁹¹

4.2 The Rise of Collective Consciousness

In the wake of the Paris Peace Conference of 1919, a wave of liberal institutionalism swept over the world, embodied in the establishment of the first IO, the League of Nations (LN).⁹² RF readily adapted to this rise in collective consciousness. From the onset of the

⁸⁸ Anonymous interviewee 1, November 19, 2010.

⁸⁹ Ma, 172-3; Steven C. Wheatley, *The Politics of Philanthropy: Abraham Flexner and Medical Education* (Madison: University of Wisconsin Press, 1988), 154.

⁹⁰ Nielsen.

⁹¹ Coleman and Court.

⁹² Thomas Richard Davies, "A 'Great Experiment' of the League of Nations Era: International Nongovernmental Organizations, Global Governance, and Democracy Beyond the State," *Global Governance* 18, no. 4 (2012): 405-423.

international era, RF was as an important benefactor to formal institutions, such as the League of Nations Health Organization (LNHO) and continuing with the WHO, mandated by the world's states to disseminate new knowledge oriented towards reducing health disparities in the global South. Once the specialized agencies of the UN system were in place, RF's efforts became focused on sustaining both private organizations such as the Population Council and public sector networks such as the INCLEN, sharing with the Foundation similar aims. Through its support for such international institutions, Foundation continued its expansion of epistemic communities which served to advance particular ideas, for example, global malaria eradication within international policy making arenas.

In this internationalist era, the RF's roadmaps for collective action were purposefully adapted to opportunities created by state expressed preferences for addressing complex problems collectively through formal multilateral organizations and later through informal international networks, both of which RF readily supported. This agency through adaptation was on full display via its enabling of both the LNHO and INCLEN.

4.21 The League of Nations Health Organization

RF demonstrated an early commitment to the development of multilateral institutions intended to facilitate international cooperation on health issues. The end of World War I (WWI) saw the rise of a liberal idealism exemplified by the establishment of the LN, which RF capitalized on and helped nurture. In this period RF was the largest contributor to the LNHO, accounting for one third to one half of its budget.⁹³

When it was established in 1921, LNHO was an attempt to consolidate pre-existing regional and international health organizations competing for policy influence. Its lineage can be traced back the first International Sanitary Conference that took place in Paris in 1851, one of four such conferences over a fifty-two year period that aimed at controlling through cooperation communicable diseases such as cholera adversely impacting maritime trade.⁹⁴ In

⁹³ Anonymous Interviewee 2, January 18, 2011; Craig N. Murphy, *International Organization and Industrial Change: Global Governance since 1850* (New York: Oxford University Press, 1994), 183.

⁹⁴ Staples, 122; Virginia Berridge, Kelly Loughlin, and Rachel Herring, "Historical Dimensions of Global Health Governance," in *Making Sense of Global Health Governance: A Policy Perspective*, eds., Kent Buse, Wolfgang Hein and Nick Drager (Basingstoke: Palgrave Macmillan, 2009), 30.

1902, the Pan American Sanitary Bureau (PASB) was launched by Western Hemisphere countries concerned that communicable diseases of regional importance were not to being sufficiently addressed by what were viewed as meetings informed by Eurocentric agendas. The intended purpose of PASB was thus to function as a clearing-house for information on yellow fever and malaria.⁹⁵ Four years later, the Office International D'hygiene Publique (OIHP) was established in Paris to perform a similar function,⁹⁶ demonstrating a common volition on the part of states to move beyond conventions to independent IOs.⁹⁷

In the wake of WWI, attempts were made to establish a single IO to unify and advance the ideas of the public health community. While RF strongly supported the concept of the LN and LNHO in particular,⁹⁸ the latter was strongly opposed by the United States government, over concerns that it would lose the significant influence it enjoyed within PASB.⁹⁹

Yet the purpose of the Geneva based LNHO was broader than that of PASB. While it too was intended to collate and disseminate research findings and best practices and provide technical assistance to governments seeking such help, it also for example investigated and compiled information on diseases that were not of relevance to international trade, established international standards for the production of vaccines and other biologicals, and promoted public health through social reform.¹⁰⁰

In 1922 RF provided LNHO with its first grant, US\$ 492,000 of seed money to be spent over five years. Subsequent grants were made to establish an epidemiological intelligence service (US\$350,000), to enable international exchanges for an estimated 600 national health officials to study approaches employed in other countries to strengthen public health (US\$1.2 million), and to establish a LN library (US\$2 million).¹⁰¹ However the Foundation's

⁹⁵ Staples, 128.

⁹⁶ Martin David Dubin, "The League of Nations Health Organization," in *International Health Organizations and Movements*, ed., Paul P. Weindling (Cambridge: Cambridge University Press, 1995), 56.

⁹⁷ Berridge, Loughlin, and Herring, 31.

⁹⁸ Martin Bulmer, "Mobilizing Social Knowledge for Social Welfare: Intermediary Institutions in the Political Systems of the United States and Great Britain between the First and Second World Wars," in *International Health Organizations and Movements*, ed., Paul Weindling (Cambridge: Cambridge University Press, 1995), 305-325.

⁹⁹ Dubin, 57.

¹⁰⁰ *Ibid.*, 59-60.

¹⁰¹ *Ibid.*, 72, 137; Staple, 131.

role in facilitating this push for the internationalization of public health was not simply a material one.

As noted by Martin David Dubin, RF aided in staff recruitment, many of whom were trained in programs established by Foundation grants. Moreover RF advised on government requests for technical assistance and the formation of advisory bodies, periodically seconding its own staff for these purposes.¹⁰²

This is not to say that there was never tension between LNHO and its principal benefactor over strategies informing collective action on health. Whereas for example Dichlorodiphenyltrichloroethane (DDT) was the mainstay of IHD malaria control efforts, League officials were committed to the idea that malaria control could only be sustained through a broader approach to rural development,¹⁰³ a concept that RF would years later embrace itself. Yet however misguided, RF's political and material autonomy allowed the Foundation to continue its malaria control efforts throughout World War II (WWII), when international discord effectively shut down the LN and with it LNHO's Malaria Commission.¹⁰⁴ Despite such ideational divergence, however, RF's role in the interwar period to establish an international public health episteme informed by the same ideas and norms guiding its own programs is beyond refute.¹⁰⁵

4.22 The World Health Organization

WHO was established in 1946, the final UN specialized agency created in the WWII era. Amy Staples has suggested that OIHP, PASB and LNHO all served to inform WHO, which in her words was marked by “a professional ideology and the apolitical standards of science.”¹⁰⁶ Yet as previously noted by Birn, RF's deep imprint on the nascent health

¹⁰² Dubin, 72.

¹⁰³ Socrates Litsios, “Malaria and International Health Organizations,” in *Philanthropic Foundations and the Globalization of Scientific Medicine and Public Health*, eds., Benjamin B. Page and David A. Valone (Lanham: University Press of America, 2007b), 160. 159-164.

¹⁰⁴ Farley.

¹⁰⁵ Dubin, 73.

¹⁰⁶ Staples, 123.

organization was quite evident, both in terms how particular diseases were approached and the individuals involved in leading these efforts.

There is a general consensus amongst historians that the WHO executive board drew inspiration from IHD's malaria program in its 1948 commitment to curb the spread of malaria via DDT.¹⁰⁷ This should not be surprising, however, for two of IHD's most prominent malariologists—Paul Russell and Fred Soper—had by this point left RF to take leadership positions within WHO and PASB: Russell as head of WHO's malaria expert committee, and Soper as Director of PASB which was renamed the Pan American Health Organization (PAHO) in 1947 before its absorption into WHO as a regional office in 1949.¹⁰⁸

At the time of WHO's founding, malaria was a significant public health threat in much of the world with approximately 750 million annual infections giving rise to some seven and half million deaths, which accounted for ten percent of all infant mortality.¹⁰⁹ Despite the fact that IHD teams in Sicily ultimately failed to control the spread of malaria via indoor DDT spraying, and resistance in vectors first recorded in 1951,¹¹⁰ WHO's Global Malaria Eradication Program (MEP) headed by Paul Russell adopted the same strategy, which was actively supported by Dr. Marcolino-Candau, WHO's Director General from 1953 to 1973 and a former RF partner during IHD's *A. gambiae* eradication efforts.¹¹¹ An astounding total sum of approximately US\$5.6 billion was spent by WHO, the United Nations International Children's Emergency Fund (UNICEF) and national governments on MEP,¹¹² in hindsight a reckless undertaking given DDT's questionable track record as a primary means of prevention, the anemic health systems of most developing country partners, and the lack of a vaccine, which all contributed to the program being declared a failure in 1964.¹¹³

¹⁰⁷ Farley, 286.

¹⁰⁸ Litsios, "Selskar Gunn," 53; Farley, 285; Staples, 122.

¹⁰⁹ Ibid., 161.

¹¹⁰ Ibid., 164-5.

¹¹¹ Birn, *Marriage of Convenience*, 273-4; Farley, 286.

¹¹² Staples, 179.

¹¹³ Litsios, "Selskar Gunn," 53.

Despite RF's role in the costly failure of MEPs, of greater long-term significance for public sector capacity in developing countries was WHO's emulation of RF's country-level epistemic expansions. By 1951 when it was shut down, IHD staff had worked in over 80 countries,¹¹⁴ and had trained tens of thousands of health professionals in those countries. However in the first twenty years of its existence, WHO provided some two thousand fellowships to fund advanced public health training for developing country professionals, in-country training to tens of thousands, whilst advising national ministries of health on disease prevention and control.¹¹⁵

While IHD served to inform many of WHO's initiatives, through the creation of UN the developing world found a new voice in global affairs which grew louder as a result of decolonization. What was formerly tropical medicine was re-baptized as international health; and with the emergence of other IOs such as the International Bank for Reconstruction and Development, which gradually gained an interest in public health, and with the rise of official development assistance, the whole *modus operandi* of international health changed. The space became more crowded and a more organic concept of health emerged that expanded beyond the parameters of the biomedical paradigm RF had helped to foster through its country level epistemic expansions in the first three decades of the twentieth-century.¹¹⁶ Indeed RF itself was increasingly deviating from its own model as the Sri Lankan health unit model illustrates. At the same time, states—particularly Northern states—were increasingly concerned with new issues, most notably over-population linked to poverty. Yet, with a few exceptions, Northern states would remain largely disinterested in developing countries' most pressing health issues, issues that would prove in many instances to be beyond the capacity of both individual fledgling national public health systems and the IOs charged with managing international responses to public health crises. Once again, RF successfully adapted its strategies for advancing ideas in policy-making arenas, choosing to reinvent itself in this context,¹¹⁷ by carving out new niches within which it could act as a catalyst of change. These included family planning, clinical epidemiology and global health diplomacy.

¹¹⁴ Farley, 2.

¹¹⁵ Birn, *Marriage of Convenience*, 276; Staples, 137.

¹¹⁶ Anonymous interviewee 2, January 18, 2011.

¹¹⁷ Ibid.

4.23 *The 'Population Problem': Demography and Family Planning*

As noted by John Perkins, in the aftermath of WWII, the leadership of RF began to exhibit a neo-Malthusian view of the population growth in the global South consistent with the views espoused by ecologist William Vogt, whose 1948 book *Road to Survival* called attention to the perils of ignoring a finite global carrying capacity.¹¹⁸ For Vogt—who in 1951 was appointed director of the Planned Parenthood Federation of America—unrestrained population growth globally would lead to scarcity and starvation globally. Scarcity and famine would in turn lead to increases in global conflict.¹¹⁹ This narrative would be used repeatedly as justification for American attempts to thwart the expansion of communism during the Cold War era.

While developing country mortality rates began to decline in the post-war era, the limited demographic data that existed showed fertility rates remaining largely static.¹²⁰ Projected population increases across the global South were viewed by Western donor states as threats to such developing countries achieving what American demographer Frank Notestein had a decade prior referred to as the “demographic transition,” the necessary reductions in both fertility and mortality rates required to attain industrial economy status.¹²¹ Yet as shown by Judith Nagelberg, neither the specialized agencies of UN or Western donor countries were willing to develop the contraceptive options required for reductions in developing country birth rates to be achieved.¹²²

In 1952, John D. Rockefeller III established the Population Council (PC) as a stand-alone not-for-profit entity to support the maturation of demography as a discipline,¹²³ and to develop contraceptive options that would be accepted for use in developing countries.¹²⁴

¹¹⁸ John H. Perkins, “The Rockefeller Foundation and the Green Revolution, 1941-1956,” *Agriculture and Human Values* 7 (1990): 6-18.

¹¹⁹ William. Vogt, *The Road to Survival* (New York: W. Sloane Associates, 1948).

¹²⁰ Judith Nagelberg, “Promoting Population Policy: the Activities of the Rockefeller Foundation, the Ford Foundation and the Population Council 1959-1966,” (PhD diss., Columbia University, 1985), 26, 29. Microfilms International.

¹²¹ Ole Jacob Sending, *The Formation and Transformation of a Transnational Field* (Berkeley: Center for Culture, Organization and Politics, 2009), 3.

¹²² Nagelberg, 48.

¹²³ *Ibid.*

¹²⁴ *Ibid.*, 18, 37.

This knowledge and product availability, it was hoped, would catalyze interest within national and international policy forums for the need to formulate policy responses to the threats posed by overpopulation.¹²⁵

While not formally affiliated with RF, PC nonetheless embraced the Foundation's country-level epistemic expansion template in its efforts to persuade governments of the need to embrace family planning as a core pillar of economic development. Between 1953 and 1968, PC provided over 500 fellowships for individuals from over twenty countries to undertake advanced study in demography at American universities. Of these almost three quarters went to individuals from developing countries.¹²⁶ Moreover by the mid-1960s, RF, in conjunction with the Ford Foundation (FF) and the then nascent United States Agency for International Development (USAID), had become principal financial backers of international family initiatives including the work of PC.¹²⁷

RF was able to maintain its discursive and instrumental power in the post-war era, in part by supporting the establishment of new organizations like PC, which would go on to fill important gaps created by restrictions imposed on WHO by its member states. The Foundation still maintained over one hundred field staff in this time period,¹²⁸ and spearheaded the construction of physical institutions, such the network of public laboratories developed in partnership with the governments of Brazil, Columbia, Egypt, India, Nigeria, South Africa, Trinidad and the United Kingdom that focused on identifying novel pathogenic viruses and developing new diagnostic techniques.¹²⁹ Nevertheless, by the 1970s, when it was committing approximately two thirds of its total expenditures to public health, population and agricultural development related initiatives in developing countries, it

¹²⁵ Ibid., 80-3.

¹²⁶ Ole Jacob Sending and Iver Neumann, "Governance to Governmentality: Analyzing NGOs, States and Power," *International Studies Quarterly* 50, no. 3 (2006): 660.

J. Caldwell and P. Caldwell, *Limiting Population Growth and the Ford Foundation Contribution* (London: Frances Pinter, 1986); F. Notestein, "The Population Council and the Demographic Crisis of the Less Developed World," *Demography* 5, no. 2 (1968): 553-560.

¹²⁷ Sending 2009, 19; O. Harkavy, L. Saunders, and A. Southam, "An overview of the Ford Foundation's Strategy for Population Work," *Demography* 5, no. 2 (1968): 545.

¹²⁸ Nagelberg, 194.

¹²⁹ Thieler; Downs.

had to be selective in where it applied its resources and ensure that those ventures it supported could eventually be sustained without its continual support.¹³⁰

4.24 Transnational networks to build public sector capacity: The case of INCLEN

An excellent example of RF-driven sustainable philanthropy is the International Clinical Epidemiology Network (INCLEN), established in 1980 by RF's Dr. Kerr White as a global forum to help clinicians and health scientists learn from and engage in the application of population health research methodologies to clinical medicine.¹³¹ The end goal of RF was that INCLEN would provide medical decision makers—particularly those in low and middle-income countries but also within IOs and Northern advisory bodies (e.g. the US Institutes of Medicine)—the best available evidence with which to make difficult decisions, such as concerning rationale drug use.¹³²

While RF invested more than \$75 million in INCLEN over its first two decades,¹³³ the initiative was spun off into an independent non-profit organization in 1988 and, as of 2006, was comprised of over 1,400 individual members in forty-one countries.¹³⁴ By creating advanced training centres within existing public sector institutions, INCLEN has established clinical epidemiology and related disciplines (e.g. biostatistics, pharmacoepidemiology and clinical economics) in much of developing world. For a Foundation, INCLEN represents the ideal investment: one that is low-risk, yields a high-return, and ultimately proves to be self-sufficient.¹³⁵ For RF in particular, INCLEN has proven to be a cost-effective vehicle with which to create and expand a truly global community of experts sharing a common way of problematizing and measuring health challenges, while concurrently building public sector

¹³⁰ John R. Evans, "The Evolution of International Health Research: A Patchy Personal Perspective" (Inaugural John R. Evans Lectureship in International Health Centre for International Health Faculty of Medicine, University of Toronto May 3, 2002).

¹³¹ *Ibid.*

¹³² Peter Tugwell, Robert Fletcher, Suzanne Fletcher, Charlie Goldsmith, Mohammad Rahbar, Vivian Robinson, Desmond Runyan, and Laura Sadowski, "International Clinical Epidemiology Network: An Opportunity for SGIM International Cooperation," *J Gen Intern Med* 21 (2006):792–795; S.B.J. Macfarlane, T.G. Evans, F.M. Muli-Musiime, O.L. Prawl, and A.D. So, "Global Health Research and INCLEN," *The Lancet* 353 (February 6, 1999): 503.

¹³³ Macfarlane, Evans, Muli-Musiime, Prawl, and So.

¹³⁴ Tugwell et al. 2006 Tugwell, Fletcher, Fletcher, Goldsmith, Rahbar, Robinson, Runyan, and Sadowski.

¹³⁵ Macfarlane, Evans, Muli-Musiime, Prawl, and So.

capacity building. Through INCLIN, RF demonstrated that epistemic expansions oriented towards shaping the formation of public policy could still occur through informal channels, which foreshadowed its utility as a global health governor in a neo-liberal world order, when the United States initiated a trend of privileging informal self-selective organizations over formal established IOs including but not limited to WHO.

4.25 (Private) International Health Diplomacy: anticipating the neo-liberal world order

In the late 1970s, two issues diminished WHO's authority setting the stage for RF to assume a new role in the shift from international to global health: that is, the role of diplomat. The first was its conflict with the United States and multinational pharmaceutical companies over the concept of essential medicines leading to the organization's financial wings being clipped; the second was its push for a global health policy framework that was ultimately rejected by its primary benefactors.

In 1977 WHO published for the first time its *Action Program on Essential Drugs* (APED). This list of safe and effective medicines was deemed to be critical for the treatment of both communicable and non-communicable diseases (NCDs), and in the following year, "access to essential medicines" became one of the Alma Ata Declaration's eight core pillars.¹³⁶ These actions had significant implications for firms, for in the eyes of the world's foremost health authority, any drugs listed could be excluded from proprietary protection to ensure states had at their disposal the fundamental tools for protecting public health.¹³⁷ WHO's support for the 1981 International Code on Marketing of Breast-Milk Substitutes,¹³⁸ (a policy framework intended in part to restrict firms from marketing the adoption of formula as a safe replacement for breast feeding)¹³⁹ increased the ire of both industry and the United States government, as the majority of the world's large pharmaceutical and food and beverage companies were then United States-based. However while the United States

¹³⁶ World Health Organization, *Declaration of Alma-Ata International Conference on Primary Health Care* (Alma-Ata: WHO, September 6-12, 1978).

¹³⁷ Kelly Lee, 90-91.

¹³⁸ Gill Walt, Neil Spicer, and Kent Buse, "Mapping the Global Health Architecture," in *Making Sense of Global Health Governance: A Policy Perspective*, eds., Kent Buse, Wolfgang Hein and Nick Drager (Basingstoke: Palgrave Macmillan, 2009), 50.

¹³⁹ Katherine Sikkink, "Codes of Conduct for Transnational Corporations: the Case of WHO/UNICEF Code," *International Organization* 40, no. 4 (1996): 814-40.

government was successful in freezing WHO's 1982 budget and delaying what were supposed to be mandatory contributions in subsequent years, it was ultimately unable to force the organization to retract its list due to its willingness to speak truth to power in support of its most vulnerable members' needs.¹⁴⁰

WHO inherited the same biomedical view of public health that had shaped much of IHD's initiatives in the first half of the twentieth-century. However by the late 1970s under the leadership of Halfdan Mahler, it increasingly sought to call attention to the structural and social determinants of the health challenges it was mandated to address.¹⁴¹ Its stated goal of "Health for All," by 2000 at the Alma Ata conference,¹⁴² was intended to be achieved not through advanced technology but through an emphasis on Primary Health Care (PHC) coupled with improved nutrition, access to clean water, and empowering historically marginalized populations shouldering a disproportionate proportion of the global disease burden.¹⁴³

Correctly anticipating a lack of political will within key donor states to support such broad goals, RF assumed the role of private diplomat through its proposed alternative to PHC, termed Selective-Primary Health Care (Selective-PHC),¹⁴⁴ and sponsored a meeting on the topic which was held at its conference facilities in Bellagio, Italy. Instead of the structural changes advocated by WHO, Selective-PHC emphasized that states and IOs should embrace a standard group of strategies proven to be both efficacious and cost-effective in reducing morbidity and mortality (e.g. breast feeding, immunizations, and Oral Re-hydration Therapy (ORT)).¹⁴⁵ UNICEF's ultimate adoption of the Selective-PHC template was a political blow to WHO, which became increasingly isolated politically in the dawn of the neo-liberal era.¹⁴⁶

¹⁴⁰ Kelly Lee, 91.

¹⁴¹ Ibid., 49; I. Illich, *Medical Nemesis: the Expropriation of Health* (London: Marian Boyars, 1975).

¹⁴² World Health Organization, *Declaration of Alma-Ata*.

¹⁴³ Kelly Lee, 75; Walt, Spicer, and Buse.

¹⁴⁴ Julia Walsh and Kenneth Warren, "Selective Primary Health Care, an Interim Strategy for Disease Control in Developing Countries," *NEJM* 301, no. 18 (1979): 967-974.

¹⁴⁵ Kelly Lee, 80.

¹⁴⁶ Walt, Spicer, and Buse, 50; Fiona Godlee, "WHO in Retreat: is it losing its influence?" *BMJ* 309, no. 6967 (1994): 1481-85; Godlee, "WHO in Crisis," *BMJ* 309, no. 6966 (1994): 1424-28.

Much of WHO's diminished influence was externally imposed. Yet the organization also hobbled itself in its unwillingness to acknowledge the increasing relevance of non-state actors to the resolution of complex health problems.¹⁴⁷ As noted by Virginia Berridge, Kelly Loughlin, and Rachel Herring, Alma-Ata was premised on states being the primary facilitators of health protection. This was in many instances inconsistent with the realities on the ground,¹⁴⁸ and WHO was slow to engage with either Civil Society Organizations (CSOs) or firms in formulating new approaches to what had become global health challenges, such as a lack of access to essential medicines.¹⁴⁹ In this context, RF once again proved itself as an innovator by presenting the PPP model as a form of global governance adapted to an era of fiscal austerity and an increasing number of actors seeking policy influence over how global health disparities could be most effectively overcome.

4.3 The Neo-liberal World Order

The primary role of RF in the neo-liberal era has been that of "private diplomat." It has convened meetings and presented novel frameworks oriented towards providing public goods to vulnerable populations in developing countries when public sector authorities mandated to fill this role have been unable to do so. Moreover it has sought to bridge gaps between discordant parties, such as MNCs, IOs and civil society groups, which all play key roles in the development and provision of health technologies in developing countries. Its principal strategy for achieving these two broad goals has been designing, enabling and championing product development oriented PPPs such as IAVI and the TB Alliance, which have been embraced by the principal state and non-state proponents and beneficiaries of neo-liberal ideology. This embrace, I argue, has provided the Foundation with continuing discursive, instrumental and structural power in the governance of global health.

PPPs refer to initiatives within which private entities assume some degree of responsibility for the provision of goods and services long considered the sole responsibility of

¹⁴⁷ P. Sollis, "Multilateral Agencies, NGOs and Policy Reform," *Development in Practice* 2, no. 3 (1992): 174.

¹⁴⁸ Berridge, Loughlin, and Herring, 41.

¹⁴⁹ Walt, Spicer, and Buse, 54.

governments. In the context of international development, RF presented the PPP model in the early 1990s as an approach for developing new health technologies for diseases such as malaria and dengue ignored by pharmaceutical companies because of low profit margins. Now employed across the development spectrum for product development, financing, issue advocacy and delivery, PPPs are controversial because they institutionalize the voice of private actors, including for-profit entities, within the collective decision-making process at the global level.¹⁵⁰

A defining feature of health governance in the neo-liberal era has been the explosion of global PPPs across a range of sectors informed by the narrative that the innovative capacity of the private sector must be tapped if new health technologies and therapeutics targeting diseases disproportionately affecting the world's poor are to be developed.¹⁵¹ Traditionally, the *raison d'être* of corporations has been to make profits for shareholders, a purpose often seen as fundamentally distinctive, even in opposition to the production of public goods. Yet in little more than a decade through the PPP paradigm, corporations have paradoxically become equal partners with public sector institutions in the creation of public goods.¹⁵² While the motivations of participating corporations may be questioned, this does not diminish the fact that states now rely on corporations for the development of public goods (e.g. vaccines) that public sectors once produced on their own.

PPPs have been defined by their specificity of purpose, their partners' commonality of interest, and the willingness of PPPs to allocate resources and clearly commit to add value.¹⁵³ Because the strategies of PPPs are generally formed through consensus,¹⁵⁴ their spread has increased the influence of for-profit entities in how public health challenges are approached at the global level. As a consequence, multinational pharmaceutical companies now have

¹⁵⁰ Kent Buse and Andrew Harmer, "Seven Habits of Highly Effective Global Public-Private Health Partnerships: Practice and Potential," *Social Science and Medicine* 64 (2007) 267

¹⁵¹ Richard T. Mahoney and James Maynard, "The Introduction of New Vaccines into Developing Countries," *Vaccine* 17, no. 7-8 (1999): 647; Klaus Schwab, "Global Corporate Citizenship: Working with Governments and Civil Society," *Foreign Affairs* 87, no. 1 (2008): 107-118.

¹⁵² Simon Rushton and Owain Williams, "Private Actors in Global Health," in *Partnerships and Foundations in Global Health Governance*, eds., Simon Rushton and Owain Williams (New York: Palgrave Macmillan, 2011), 1-28; Anonymous interviewee 5, June 30, 2011.

¹⁵³ Anonymous interviewee 6, June 23, 2011.

¹⁵⁴ Michael Reich, ed., *Public-Private Partnerships for Health* (Cambridge: Harvard University Press, 2002).

greater formal influence over strategies informing collective action intended to address the health effects of global poverty and inequality than ever before.¹⁵⁵

4.31 Product Development Partnerships

RF has played a leading role in the PPP template being applied to product development within the health sector. Yet as will be shown below, the original push for what are commonly referred to as Product Development Partnerships (PDPs) was not a result of a pre-determined preference for markets over public sector institutions in pursuit of health as a public good. Instead, as will be demonstrated, it was a pragmatic adjustment on the part of RF to the dominance of the larger political landscape that created a need for such a template. Within free market economies, public sectors typically have to involve themselves where markets are weak but do not always do so, giving rise to state-market gaps. The first health-oriented PDPs centered on the development of new contraceptive technologies were forged in the early 1970s in the United States to circumvent the consumer hostility that constrained both government and industry from responding to a pressing public need. By way of RF's Population Division, as well as FF and RF support for organizations such as the PC and CONRAD, RF seed money catalyzed the development of new contraceptive options, including the Copper T Intrauterine Device (IUD) and Norplant, that upon demonstrating their efficacy, gained the support of public sector financing. In less than two decades PC alone registered seven products with the US Food and Drug Administration.¹⁵⁶

One organization that would prove to play a seminal role in the realization of the PDP template driven by RF in 1990s was actually created with FF money. With an initial FF grant of approximately \$250,000, the non-profit Program for the Introduction and Adaptation of Contraceptive Technology (PIACT) was established in 1977 by former Ford employees to bridge the gap between the scientists at organizations such as PC that were developing contraceptive options, firms that would ultimately produce these technologies, family

¹⁵⁵ Kent Buse and Chris. Naylor, "Commercial Health Governance," in *Making Sense of Global Health Governance: A Policy Perspective*, eds., Kent Buse, Wolfgang Hein and Nick Drager (Basingstoke: Palgrave Macmillan, 2009), 199-201.

¹⁵⁶ Anonymous interviewee 7, February 23, 2011.

planning programs, and intended consumers mostly in the developing world.¹⁵⁷ PIACT's purpose was thus to ensure that products made it from the research phase into widespread public use after it became evident that existing research-oriented organizations such as PC and public sector entities sponsoring such research institutions lacked the capacity or volition to ensure either production or the necessary marketing required for widespread adoption. Within two years of PIACT's founding, it became apparent that while this vacuum was particularly relevant to contraception because of the social stigma surrounding it, it also existed for many other aspects of primary health care, which saw the scope of the organizations' work expand, resulting in the change to its present name Program for Appropriate Technology in Health (PATH).¹⁵⁸

From its establishment, PATH was focused on looking for problems untouched by other actors and providing solutions to them. The vaccine vial-monitor—one of the first technologies developed with funding from the United States International Development Agency—serves to illustrate the importance of an actor capable to bridging public and private sectors in pursuit of solving complex technical problems. Vaccines depended—and still depend in several instances—on the maintenance of a cold chain to ensure they are not rendered ineffective by heat exposure. The inability to maintain the cold chain has been and continues to be major problem in developing countries. Prior to the invention of vial-monitors, vaccines rendered ineffective by warming were often still administered because there was no indicator of their potency. PATH staff learned about a chemical called PTS manufactured by a chemical synthesis company in Alberta, Canada licensed to the former Allied Chemical Corporation that changed colour with exposure to heat over time and incorporated it onto a label of the measles vaccine as an indicator of viability. This particular application of PTS led to the establishment of a new spin-off company in New Jersey called Temptime that has since developed a number of markers that parallel the degradation of several vaccines currently in use. More importantly, vaccine vial-monitors are now on almost every vial of vaccine distributed by UNICEF and WHO and have become a standard that health care workers all understand. The minor cost (adding about three cents to each vial of vaccine produced) has saved an estimated thirty percent of vaccine previously wasted

¹⁵⁷ Anonymous interviewee 8, June 9, 2011; Anonymous interviewee 9, November 29, 2011.

¹⁵⁸ Anonymous interviewee 8, June 9, 2011.

through heat exposure. Interestingly, vial monitors were not adopted by WHO and UNICEF for 15 years due to their concerns over the long-term financial viability of the producing firms and costs. In contrast, PATH took 5 years to develop it and get it out into public use.¹⁵⁹

While PATH would remain a small organization for another twenty years, a critical shift in the character of the world order set in motion shortly after its establishment ensured the future relevance of organizations capable of bridging public and private sectors to produce needed public goods to the overall governance of global health. The rise of neo-liberalism and the end of the Cold War created significant challenges for development-oriented organizations dependent on public funds and focused on attaining their goals through the strengthening of the innovative capacity of public sector organizations. More specifically, after the perceived defeat of socialism, universal health care was not a political option in the United States, where a push for small government and a greater role for markets in the production of public goods was whole-heartedly embraced. WHO suffered greatly from this ideology as the Reagan administration viewed it and the Alma-Ata declaration as being inherently socialist in nature, while the World Bank, which embodied the shift towards neo-liberalism, was now in a comparatively much stronger position to influence international health governance.¹⁶⁰

Paralleling these shifts, the international harmonization of quality assurance standards for the production of pharmaceuticals set by WHO drove up the costs of bringing new therapeutics and vaccines to market. As a consequence of this combination ideological diffusion and increased costs, national governments in both industrialized and developing countries were increasingly ceding the responsibility of developing and producing essential medicines and preventative technologies to firms, which were better positioned to shoulder the financial burden of conducting clinical trials and meeting such international quality assurance standards.¹⁶¹

¹⁵⁹ Anonymous interviewee 8, June 9, 2011.

¹⁶⁰ Anonymous interviewee 2, January 18, 2011.

¹⁶¹ Muraskin, *The Politics of International Health*, 27-8.

This is not say that public sectors (i.e. national research institutes or universities) do not engage in clinical research relevant to the needs of the world's poor. The first phases in clinical trials (0/1) is that of target validation and discovery (e.g. determining pathogenesis, inhibitors etc.), an innovative phase which public institutions tend to be good at and which public granting councils often fund. However the process of establishing safety, testing protocols, conducting clinical trials is expensive, industrial, and beyond the budget of national grant-making agencies. Moreover applicants proposing to undertake this kind of research in Northern states compete for funding from a pool of funds informed by national priorities where neglected tropical diseases have little direct relevance.¹⁶²

By the early 1990s, with few exceptions, only large pharmaceutical companies had the resources to take drugs and vaccines from the target validation and discovery phase, to phase three trials under current international regulatory standards set by WHO. Yet concerns over the financial risks of actually doing so meant that these firms had also been shying away from investing in the needs of the world's poor for several decades. The reality of pharmaceutical research is that for every eureka moment in the lab, there are many failures; drugs intended for those with limited purchasing power typically offer low returns on investment; and even when sales are guaranteed, there is a short period to recoup the high costs of research and development, given the natural process of drug resistance which is accelerated by sub-optimal usage.¹⁶³

For some this begs the question as to whether the Good Manufacturing and Laboratory Practice Standards—the regime set by WHO stipulating the criteria that new drugs and vaccines must meet before they can be licensed—might be loosened to enable such research and development intended to benefit countries where established private pharmaceutical sectors are limited. In low and middle-income countries, local innovation for local needs usually produces products that are not high technology. Consequently, regulatory regimes in such contexts are typically not as strenuous as their analogues in high-income countries, for example the United States Food and Drug Administration (FDA). In the eyes of some developing country scientists, the harmonization of rigid universal standards can be an

¹⁶² Anonymous interviewee 10, November 29, 2010.

¹⁶³ Ibid.

impediment to local innovation, for if such products do not cause harm and the local criteria are met, there should be allowances for such products to enter local markets.¹⁶⁴

In the mid-1990s for example, RF was working with a Chinese company in the production of a safe and effective yet inexpensive Hepatitis B vaccine. The product, however, did not meet WHO quality standards, which meant that donor funding could not be used to purchase the vaccine for use outside of China. While RF ended up helping the Chinese develop an approved production process, it resulted in a more expensive vaccine.¹⁶⁵

Yet from WHO's perspective, allowing for two different quality standards would imply that poor people cannot have the same quality of drugs as people living in wealthy countries, which is deemed completely unacceptable from the standpoint of organizations working towards global health equity. While greater regulatory scrutiny has increased the cost and timelines of getting approvals for new therapeutics and vaccines, the overall increase in stringency resulting from the global harmonization of quality standards is deemed to be a net benefit. This is because poor quality of any product undermines confidence in that product class, which is why WHO pays such close attention to adverse events.¹⁶⁶

Clearly there is an element of truth in both viewpoints and it comes down to what is deemed to be sufficient oversight, what is practical and how much risk societies are willing to accept to get the products they want.¹⁶⁷ The reality that RF was forced to work around in the context of the early 1990s was that most public sector institutions lack the development or manufacturing capacity to bring product to market,¹⁶⁸ meaning that firms had to be engaged if new drugs and vaccines for the world's poor were to be created, a situation which remains largely unchanged today.¹⁶⁹

Certainly for states, the appeal of the PPP model in product development was that the

¹⁶⁴ Anonymous interviewee 11, January 20, 2011; Anonymous interviewee 12, November 24, 2010.

¹⁶⁵ Anonymous interviewee 3, December 6, 2010.

¹⁶⁶ Anonymous interviewee 12, November 24, 2010.

¹⁶⁷ Anonymous interviewee 13, March 1, 2011.

¹⁶⁸ Anonymous interviewee 12, November 24, 2010.

¹⁶⁹ Anonymous interviewee 14, December 9, 2010.

private sector would take on the costs and risks of developing and delivering in a timely manner, end products which public sectors lacked the capacity to produce on their own.¹⁷⁰ By taking the view held by some of RF's critics that states should not have involved themselves with firms in the pursuit of strengthening public health, half of all available research funding would automatically be removed from the equation, as would access to cutting-edge technology. To attain access to the best possible science, RF was willing to partner with businesses.¹⁷¹ The PDP paradigm established by PATH offered a neat solution to the seemingly intractable problem posed by the lack of resources being committed by either public and private authorities for research and developing preventative and therapeutic options for important diseases of the poor, the so-called "neglected diseases." Consequently, through seed funding and diplomacy, RF began leveraging private sector resources, public sector capital and commitments working towards a common goal to enable the creation of needed technologies for the public good that public sectors were no longer capable of producing on their own.

4.32 The Children's Vaccine Initiative

This enablement began in 1984 when the Task Force for Child Survival (TFCS) was struck to address the subject of vaccines for neglected diseases. A neutral expert-advisory body convened by WHO, UNICEF, RF, World Bank, and the United Nations Development Program (UNDP), TFCS was intended to serve as a Secretariat and the coordinating body for the member organizations' collaborative immunization efforts tasked with developing a system of immunization that would function across the various WHO regions. While the resulting template was credited with dramatically improving global immunization rates within a five-year period, this proved to be a temporary success, as the system ultimately fell apart in its infancy following changes to the leadership of the participating IOs that produced discordant views on the utility of the approach, and on WHO ceding authority to an external body.¹⁷² This brief success and ensuing collapse illustrates well the challenges of sustaining a common commitment to ideational forms of governance.

¹⁷⁰ Anonymous interviewee 3, December 6, 2010; Anonymous interviewee 15, January 18, 2011.

¹⁷¹ Anonymous interviewee 16, December 9, 2010.

¹⁷² Anonymous interviewee 17, August 18, 2011.

Over a period of six years RF—playing the role of private diplomat—sponsored a series of conferences intended to increase dialogue related to TFCS ideas. The CVI grew out of these efforts. Established in 1990 by the same aforementioned partners, CVI was created as a stand-alone entity for the initial purpose of coordinating the development of an inexpensive heat-stable vaccine intended specifically for children that would confer immunity to multiple pathogens through a single oral dose. However during the course of exploring how CVI could function, it became clear that ensuring the sustainable supply of vaccines was a more pressing problem that deserved attention.¹⁷³ In his 2005 book on the Bill and Melinda Gates Foundation’s (BMGF’s) Children’s Vaccine Program and birth of the Global Alliance for Vaccines and Immunization (GAVI), William Muraskin illustrates that what began as coalition committed to the realization of a particular product morphed into an attempt to “rationalize” the entire chain of immunization—from the discovery stage, to product development and production, to delivery of the end product—when it became apparent that the various contributors (e.g. academic scientists, industry, states and NGOs) were operating with very little understanding or consideration of each other’s needs, giving rise to a fragmented system that ultimately compromised global immunization efforts.¹⁷⁴ CVI sought to enhance funding for procurement by adding additional vaccines such as Hepatitis B to the list of vaccines subsidized by WHO and UNICEF, but this effort was resisted by the two agencies.¹⁷⁵ In the eyes of its proponents, CVI failed because the participating UN agencies were unwilling to cede agenda-setting power for the greater good.¹⁷⁶

While CVI did not fulfill its stated goal, it nonetheless effectively illuminated the challenges within the vaccine sector undermining the push for ensuring the availability of “essential medicines” being made by proponents of a human rights approach to public health.¹⁷⁷ More broadly, it foreshadowed the trend of a shift from brick and mortar institutions formulating global health policy to diverse networks held together by a commitment to a common goal and vision for achieving that goal.

¹⁷³ Anonymous interviewee 9, July 12 and November 29, 2011.

¹⁷⁴ Muraskin, *The Politics of International Health*, viiii-ix, 1-2.

¹⁷⁵ Anonymous interviewee 9, July 12, 2011.

¹⁷⁶ Anonymous interviewee 17, August 18, 2011.

¹⁷⁷ Kelly Lee, 91.

In the wake of CVI's establishment in 1990, RF began canvassing support from individual firms and public sector agencies for partnerships oriented towards producing new drugs and vaccines needed to prevent and treat diseases of poverty. While the foundation was not the source of the PPP template, it was instrumental in its rise to prominence as the dominant strategy for creating new health related technologies intended to benefit the world's poor.

4.33 *The International AIDS Vaccine Initiative and the beginning of a trend*

RF's initial product development partnership began in the early 1990s when the Foundation undertook a feasibility study focused on creating a viable AIDS vaccine, for which PATH served as the template.¹⁷⁸ This meant assessing the state of the current immunological research related to HIV and identifying relevant prospective public and private sector partners with whom consultations were held to rally support for the concept and to assess individual needs.¹⁷⁹ A 1994 Bellagio meeting convened by RF's Seth Berkley led to consensus on the need for the organization to have a clear purpose, close cooperation between industry, national government, public sector research agencies and IO partners, while being reflective of their individual needs.¹⁸⁰ This consensus led to the creation in 1996 of the International AIDS Vaccine Initiative (IAVI) as an independent not-for-profit organization, led by Berkley on an interim and then permanent basis. Since its creation, IAVI has grown has coordinated 24 HIV separate trial vaccine candidates in twenty-five countries.¹⁸¹

RF would rely on PATH template in its all of its subsequent partnerships focused on developing new drugs and vaccines for neglected diseases including TB, malaria and dengue.¹⁸² Indeed all of RF's PDPs have been guided by the principle that good research and

¹⁷⁸ Anonymous interviewee 9, July 12, 2011.

¹⁷⁹ Roy Widdus and Katherine White, *Combating Diseases Associated with Poverty: Financing Strategies for Product Development and the Potential Role of Public-Private Partnerships* (London: Wellcome Trust, 2004), 9.

¹⁸⁰ The Rockefeller Foundation, *Bellagio Report – Accelerating the Development of Preventative HIV Vaccines for the World – Summary Report and Recommendations of an International Ad Hoc Scientific Committee* (New York: International AIDS Vaccine Initiative, 1994), 14; Michael Moran, "Philanthropic Foundations and Global Health Partnership Formation: The Rockefeller Foundation and IAVI," in *Health for Some: The Political Economy of Global Health Governance*, eds., Sandra MacLean, Sherri Brown, and Pieter Fourie (New York: Palgrave MacMillan, 2009), 118-129.

¹⁸¹ International AIDS Vaccine Initiative (IAVI), "30+ AIDS Vaccine Clinical Trials in 24 Countries: Research Occurring on Every Continent," *IAVI* (January 31, 2007), accessed April 20, 2013.

<http://www.iavi.org/Information-Center/Press-Releases/Pages/AIDS-Vaccine-Trial-in-24-Countries.aspx>

¹⁸² Anonymous interviewee 9, July 12, 2011.

development will ensure that products are developed with consideration for what the intended beneficiaries can afford to both purchase and deliver. This is significant because if governments attempt to integrate the end-products of PDPs into their current health systems without being able to afford them, there is a real danger that such products will crowd out other less expensive but still viable options.¹⁸³

The TB Alliance, for example, epitomizes this thinking. Established in 2000, the TB Alliance was built around the goal of developing a drug that can reduce the duration of necessary treatment, which would make a significant positive impact in TB control efforts. However, to be viewed a success, the deliverable needs to be as inexpensive or less expensive than the current standard because if it is unaffordable for those who need it, then there is no utility in developing it.¹⁸⁴ Under the leadership of Ariel-Pablos Mendez, former Director of Health Equity at RF and the current Assistant Administrator of Global Health at USAID, the PPP approach became a stand-alone model giving rise to the first global PDPs, including IAVI, TB Alliance, Medicines for Malaria Venture (MMV) and the Global Campaign for Microbicides.¹⁸⁵

The PPP paradigm has become the defining feature of global health governance in the neo-liberal era, and RF's role has become first and foremost that of global health diplomat, wholly consistent with its historical legacy, and given the private shift in global governance, fitting for an actor situated at the interaction of the public, private and third sectors. The Foundation's contemporary role as an intermediary between the increasingly large number of players shaping global health outcomes and an "honest broker" in the face of global power inequities was displayed in 1996, when the Foundation convened an informal meeting of some thirty individuals, including but not limited to officials from WHO, World Bank, UNICEF and the United Nations Development Program,¹⁸⁶ at the original Rockefeller estate. Labeled the "the Pocantico group," the majority of those present were from Northern countries and representative of a traditional bio-medical background espousing an

¹⁸³ Anonymous interviewee 2, January 18, 2010.

¹⁸⁴ Ibid.

¹⁸⁵ Anonymous interviewee 7, February 23, 2011.

¹⁸⁶ Kelley Lee, 102.

expectation of continued United States dominance in agenda setting. Yet for the first time RF called for a broader approach to global health governance, more inclusive of the diversity of actors seeking to influence outcomes.¹⁸⁷

RF has not been the sole driver of the new paradigm, but it has certainly been faster than other non-state actors at understanding the implications for public health in the changing political landscape. The diffusion of neo-liberal ideology greatly constrained the operational capacity and policy influence of health-focused IOs such as the WHO, and inferred that the only two actors of importance were states and markets. PDPs were intended as a band-aid for a crack that appeared, the pharmacological needs of the poor which these two actors were not addressing through neo-liberal policies. That said, the emergence of civil society as a political movement in this same period has—from RF’s perspective—has been far more important than PPPs to improving the overall health and wealth of marginalized populations and has been integral to the success of PDPs, given civil society’s instrumental role in ensuring health products reach their intended beneficiaries.¹⁸⁸

The entrenchment of the PPP paradigm—a market-based approach to development—reflects that we live in much more of a market-based world than any other period in the post-war era because of the spread of capitalism in all its variations. The result is an approach to strengthening health and emphasizing the potential of science that works within the dominant market-liberal economic paradigm, while seeking to correct for any of its deficiencies. The purpose of PDPs has not been to provide new ways for large corporations to profit, as the critical lens would suggest. Instead, it has been to subsidize risk-taking by those with the capacity to make meaningful contributions to understanding complex problems such as HIV adversely impacting the health and wealth developing countries, with the end goal of creating elusive solutions (e.g. vaccines) to said problems.

Yet liberal descriptions of the Foundations as mere supporters of states also does not capture the significance of RF’s institutional innovations. While the nation state remains the most important actor in a sea of actors seeking to shape the governance of global health,

¹⁸⁷ Anonymous interviewee 1, November 19, 2010.

¹⁸⁸ Anonymous interviewee 2, January 18, 2011.

effective collective action is no longer something states are capable or are willing to orchestrate themselves, meaning that the PPP model as an approach to collective action will likely remain relevant for the foreseeable future. Moreover PPPs in global health (also referred to as Global Health Partnerships (GHPs)) now exist for a variety of reasons beyond compensating for market failure, including (i) financing (exemplified by the Global Fund for AIDS, TB and malaria, hereafter referred to as the Global Fund); (ii) product delivery and technical assistance (such as Merck's Mectizan Donation Program (MDP) for the treatment of onchocerciasis; (iii) issue advocacy (for example the Roll Back Malaria (RBM) partnership; and (iv) knowledge mobilization for improved policy (for example the Health Metrics Network).¹⁸⁹

4.34 The International Association of Public Health Institutes

Yet while RF has been a catalyst for models of governance beyond the interstate system in the context of public health, it also evident the Foundation has remained committed to direct public sector capacity strengthening in the late twentieth- and early twenty-first-century. Funding the creation of the International Association of Public Health Institutes (IANPHI) is one such illustration.

IANPHI is the brainchild of Jeffrey Koplan, who as Director of the United States Center for Disease Control and Prevention (CDC) from 1998 to 2002, saw the value of having analogues to CDC elsewhere. There was significant international interest in the concept, which Koplan agreed to initiate in partnership with Pekka Puska, the current Director General of Finland's National Institute of Public Health and Welfare. Continuing RF's role as private diplomat and tradition of epistemic expansion, Timothy Evans of RF offered to sponsor and organize the initial meeting on the concept at Bellagio, which was intended to convene in October of 2001; however the September 2001 attacks led to this meeting being postponed for one year. RF provided logistical support for the initial 2002 meeting, which was attended by representatives from approximately two dozen countries. Furthermore,

¹⁸⁹ Michael Moran and Michael A. Stevenson, "Partnerships and the MDGs: Challenges of Reforming Global Health Governance," in *The Handbook of Global Health Policy*, eds., Garrett Brown, Gavin Yamey, and Sarah Wamala, Wiley-Blackwell, Forthcoming 2014); Cindy Carlson, *Mapping Global Health Partnerships: What They Are, What They Do and Where They Operate* (London: DFID Health Resource Centre, 2004).

Evans stayed involved during his transition from RF to WHO, where as an Assistant Director General for Evidence, Information, Research and Policy, he served as WHO's point-person for the fledgling association.¹⁹⁰

By 2007, Foundation President Judith Rodin was questioning the utility of the health program. Yet the global financial crisis greatly diminished the credibility of neo-liberalism as a policy paradigm by demonstrating that markets can fail, thus heightening the perceived need for greater state involvement in global governance and creating new opportunities for an organization seeking a stronger role for states in the maintenance of population health. Once again RF was quick to adapt to shifts in the preferences of government, in this case changing regulatory appetites which provided an opportunity for health governance reform which the Foundation capitalized upon by spearheading a joint-learning network on the payment systems underpinning universal health coverage.¹⁹¹

The rationale for dialogue on universal health coverage was that Northern states are spending more and more of their money on health care and government health spending will soon triple. Ironically, up until this point, the people who control capital flows related to health care delivery in countries such as the United States, the United Kingdom and Canada have never had a voice in the global health arena. RF brought these people together to learn important universally relevant lessons about each other's experiences.¹⁹² According to one former Director of RF's Health Equity program, the most important of these lessons is that states such as Canada, which currently refuse to entertain the idea of a private sector role in care delivery, are in fact being disingenuous by failing to acknowledge the existence of an already active private health sector in their midst. The unofficial status of these private sectors is creating distortions as to how much money is actually being spent on health care. From the perspective of this former RF director, private care is where these states can attempt to control the total spent while still ensuring universal access.¹⁹³ Some might interpret this message as RF's endorsement for an American-style system of health care.

¹⁹⁰ Anonymous interviewee 13, March 1, 2011.

¹⁹¹ Anonymous interviewee 2, January 18, 2011.

¹⁹² Ibid.

¹⁹³ Ibid.; Gina Lagomarsino, Stefan Nachuk, and Sapna Singh Kundra, *Public Stewardship of Private Providers in Mixed Health Systems: Synthesis Report from the Rockefeller Foundation—Sponsored Initiative on the Role of the Private Sector in Health Systems in Developing Countries* (Washington: the Rockefeller Foundation, 2009).

However a 2009 RF report demonstrated that the benefits of universal care systems outweigh the costs in most countries. While the report stopped short of explicitly criticizing the American health-care model, its findings nevertheless further diminished its credibility.¹⁹⁴

4.4 Conclusion

Upon reviewing some of RF's more prominent attempts to strengthen public health in developing countries over its one hundred year history, it is apparent that the Foundation has relied on three principal strategies to advance its ideas, which have changed over time in response to larger changes in the global political economy.

The first such strategy—one that has remained a constant throughout its history—has been to illuminate the potential of SEI to address longstanding public health challenges, as illustrated by the development of the first yellow fever vaccine. While the biomedical lens reigned supreme within the Foundation for at the least first forty years of its existence, alternative visions of how science can and should be used to advance its goals have long existed within the organization and been reflected in its programs, yet such heterogeneity has been ignored by its most vocal critics.

The second such strategy has been facilitating country-level epistemic expansions through grants and operational programs and creating post-secondary institutions that educated countries policy elite. While this strategy appears to have waned over time, some of the most enduring investments in the history of public health and medical research, such as the Johns Hopkins School of Public Health, Rockefeller University, Peking Union Medical College, and the London School of Hygiene and Tropical Medicine, which created spaces for the dissemination of new science and the expansion of knowledge bases, were the direct result of RF grant-making and diplomatic efforts in the first decade of its existence.¹⁹⁵

Moreover while the Foundation has increasingly shifted its attention from the national to the international scale, its capacity to consolidate epistemic networks and create spaces for the unifying ideas to be tested has remained. This is significant for while global governance

¹⁹⁴ Anonymous interviewee 1, November 19, 2010.

¹⁹⁵ Anonymous interviewee 1, November 19, 2010.

certainly infers the creation of rules and institutions, it also implies the existence of informal decentralized networks that create and advocate norms informing acceptable behavior.

Third, as more actors have sought policy influence in both national and international arenas, the Foundation's capacity to facilitate informal dialogue between relevant although often distrustful stakeholders has proven effective for overcoming impediments to cooperation. RF has nurtured the construction of novel strategies and institutional frameworks designed to address state and market failures disproportionately affecting the world's marginalised while still accommodating the preferences of those states promoting neoliberalism to ensure that they support as opposed to derail the Foundation's initiatives. Consequently RF has displayed a unique capacity for private diplomacy and adaptation in governance that is epitomized by the product development partnership approach.

Chapter 5: RF & the Governance of Global Agricultural Development

5.0 Introduction

This chapter provides a comprehensive overview of the Rockefeller Foundation's (RF's) role in global agricultural development and the framing of food security debates, from the Progressive to the Neoliberal era. The chapter demonstrates that RF has played a critical role in shaping how agricultural development has been approached in both individual developing countries and international policy making arenas focused on the needs of the world's poor, and that it has done so by employing the same strategies used in its public health initiatives.

The chapter begins by examining how the Foundation effectively demonstrated how advances in agricultural science could solve longstanding food security-related challenges. The transition from supporting government efforts in the United States in the first decade of the twentieth-century through applied education, to managing operational programs across the developing world is examined by way of the Foundation's initiatives in Mexico in the 1940s. RF's work in Mexico provided the most notable example of the how Science Enabled Innovation (SEI) has been a gateway to policy influence. There, RF plant breeders developed the high-yielding varieties of wheat that were embraced by governments throughout Latin America and Asia, giving rise to what is now known as the Green Revolution.

The second strategy for advancing ideas in policy arenas that the chapter examines has been RF's efforts to construct epistemic communities in agriculture within and across states. Over a fifty-year period beginning in the 1930s in China, I show how RF facilitated the training of scores of developing country agronomists, agricultural economists and molecular biologists. Training initiatives such as the Mexican and Indian agricultural programs and the International Rice Biotechnology Program, I argue, produced scientific epistemic communities, which ensured that particular ways of approaching and addressing agricultural development and food security were embedded within the public sectors of the countries where the Foundation sought to catalyze change.

The third and final strategy the chapter examines has been RF's private diplomacy, meaning

its provision opportunities for policy makers to converge and consider ideational blueprints for facilitating global cooperation on agricultural challenges intended to benefit the world's poorest people. One such RF roadmap that was embraced by states was the International Agricultural Research Centre (IARC) mode, beginning with the International Rice Research Institute (IRRI) in 1960. The IARC model, I argue, serves to illustrate RF's shift away from country-specific initiatives in favour of an international approach to agricultural development. The establishment in 1971 of the Consultative Group on International Agricultural Research (CGIAR), which now governs those centres, built on this internationalist approach.

Finally, the Foundation's adaptation to the shift from international to global governance brought on by the end of the Cold War and the rise of neo-liberalism is looked at through the application of the Product Development Partnership (PDP) template to agriculture. The framework that embodies this shift is the experimental framework that served as the blueprint for the Alliance for a Green Revolution in Africa (AGRA), an independent organization that presently coordinates much of the global collaboration geared towards agricultural development in Sub-Saharan Africa.

The combination of the promotion of SEI, the construction of scientific epistemic communities, and private diplomacy and institutional innovation have provided the Foundation with direct influence over how agriculture is practiced and taught, how related research is funded and coordinated, and how markets and technologies have been made accessible to impoverished farmers. Perceived success in these areas has afforded the Foundation power to shape the dominant discourse related to the determinants of global food insecurity, to orient research trajectories directed at solving said problems, and to establish institutional legacies within which those specific ideas and strategies became embedded and perpetuated.

The empirical evidence presented in this chapter supports the larger argument that from its inception, the Foundation's capacity to adjust its approach to fit the political context where it has sought to influence outcomes, coupled with its unwavering commitment to strengthening of indigenous scientific capacity, has informed both the successes and

shortcomings of its country-level and transnational programs' attempts to reduce hunger across the global South. While much of the empirical evidence informing these arguments was drawn from pre-existing works, this chapter nonetheless contributes to the existing literature on the Foundation through the provision of new insights on the formation of PDPs such as the African Agricultural Technology Foundation, and the template upon which AGRA is modeled.

5.1 A Driver of state-backed agricultural modernization in the progressive era

The Foundation's initial foray into international agricultural development was informed by the premise that combining cutting-edge science, with the efficiency of modern industrial technologies and management practices that had dramatically increased productivity on American farms, would have the same effect in other countries if implemented there.¹ As per its efforts to strengthen public health in this time period, RF's efforts in agricultural development in the immediate post-colonial era were focused on generating science-enabled innovation and building public sector capacity in agricultural sciences via the provision of advanced training in select disciplines to nationals of the countries within which the foundation operated. Credibility gained via breakthroughs in science and the construction and expansion of epistemic communities sympathetic to the foundation's ideas continued to be vehicles for the Foundation to attain policy influence at the county level.

Over a fifty-year period commencing in the mid-nineteenth-century, a series of United States congressional acts built on progressive principles laid the groundwork for the modernization of commercial agriculture in the United States. The first—the Morrill Land-Grant Act of 1861—earmarked federal funding for the establishment of agricultural colleges in each state with the purpose of increasing the number of formally trained agronomists engaged in teaching and applied research. The following year saw the establishment of a new federal agency, the United States Department of Agriculture (USDA), to coordinate the distribution of funding and to promote on a national scale the uptake of scientific advances and new technologies among American farmers. In 1887 the Hatch Act served to strengthen the

¹ Amy Staples, *The Birth of Development: How the World Bank, Food and Agriculture Organization, and World Health Organization Changed the World, 1945–1965* (Kent: Kent State University Press, 2006), 68.

capacity of the emerging land-grant colleges by providing funding for the development of state-run experimental research stations focusing on areas such as plant breeding, irrigation, soil management, pest control and later nutrition and economics. Finally, the Adams Act of 1906 and the Smith-Lever Act of 1914 provided additional funds for research and increasing farmers' access to ongoing technical innovation.²

In 1902, the USDA initiated a farm demonstration program geared towards increasing farmers' exposure to and adoption of advances in agricultural sciences. Led by Seaman Knapp, a co-author of the Hatch Act, the demonstrations were funded by the USDA in cotton-growing states adversely affected by a widespread boll weevil infestation.³ General Education Board (GEB) monies filled a gap by ensuring that instruction on improved farming techniques and information about the benefits of adopting new seed varieties, mechanization, irrigation methods, and the application of chemical fertilizers reached farmers in Southern regions ineligible for USDA funds.⁴ The GEB's farm demonstration program, which ran from 1906 until 1932, is credited with playing a critical role in the spectacular increase in crop yields in states where it was active, particularly in maize, which made commercial farming in the southern states a profitable enterprise. Because of its success, the education program became the template for the USDA's own extension program that was applied throughout the American South and West.⁵ RF's preference for investing in people as opposed to physical infrastructure and its long-term commitments with ambitious end-goals would prove to be hallmarks of the Foundation's work.⁶

In the 1920s, via the International Education Board, RF extended the promotion of agricultural modernization outside of the United States for the first time, again through farm

² Deborah. Fitzgerald, "Exploring American Agriculture: The Rockefeller Foundation in Mexico: 1943-1953," *Social Studies in Science* 16 (1986): 466-476; Staples, 66.

³ Staples.

⁴ Fitzgerald; John H. Perkins, "The Rockefeller Foundation and the Green Revolution, 1941-1956," *Agriculture and Human Values* 7 (1990): 6-18; as noted in chapter 3, GEB's entrance into agriculture justified that hookworm eradication in the southern United States would never be sustained without strengthening the basis of the predominately agrarian economy.

⁵ Perkins, 1997; Govindan Parayil, "Mapping Technological Trajectories of the Green Revolution and the Gene Revolution from Modernization to Globalization," *Research Policy* 32 (2003): 971-990; Anonymous interviewee, 3 December 6, 2010.

⁶ Robert E. Kohler, *Partners in Science: Foundations and Natural Scientists, 1900-1945* (Chicago: University of Chicago Press, 1991), 154; Lilly E. Kay, *The Molecular Vision of Life: Caltech, the Rockefeller Foundation, and the Rise of the New Biology* (New York: Oxford University Press, 1993), 9.

demonstrations in several European countries including Denmark, Norway, Hungary and Bulgaria. A second foray into international agriculture occurred from 1935 to 1937 as part of a rural reconstruction program in China initiated by the China Medical Board (CMB). There the Foundation provided support for what was already considered to be the premier agricultural post-secondary institutions—the University of Nanjing—which trained the majority of Chinese agronomists, while actively promoting the land-grant model by encouraging the strengthening of linkages between university and government research programs.⁷

From the mid-1930s onwards beginning with China, the Foundations' focus on capacity building in agriculture was focused solely on the developing world. The Foundation's leadership assumed that that archaic methods were constraining production across the global South, but by establishing new national centers of excellence in agricultural research committed to training scientists and educating farmers on the benefits of adopting new approaches and technologies, overall yields would increase leading to increased incomes for farmers, and overall reductions in rural poverty and hunger.⁸

5.11 The Mexican Agricultural Program: The operational template for the Green Revolution

This same logic informed the foundation's first operational agricultural-specific programs, beginning with the Mexican Agricultural Program (MAP) in 1941, the first of a series of initiatives that would drive dramatic social and environmental changes across much of Latin America and Asia. In what would be later be termed the Green Revolution, newly developed high-yielding varieties replaced traditional cultivars to increase national yields of cereal crops, primarily wheat and rice. While this rapid transition produced many long-term ecological, health and social challenges, the principal goals of the Green Revolution's architects and partner governments—strengthening national capacities in agricultural science and the widespread adoption by farmers of new seed varieties and associated inputs to increase overall yields—were ultimately achieved.

⁷ James S. Coleman and David Court, *University Development in the Third World: the Rockefeller Foundation Experience* (New York: Pergamon Press, 1993), 21-22.

⁸ Staples, 72.

As per its experience in the American South, RF agricultural program in Mexico evolved out of a pre-existing public health partnership established in 1921 between the Mexican Ministry of Health and the International Health Board (IHB) within which RF had provided fellowships to Mexican trainees who returned to take up leadership positions within the Mexican public health system. As in the American South, the Foundation was increasingly concerned that limited economic growth would undermine any population health gains made in Mexico through improved indigenous expertise.⁹ Discussion within the foundation of potential involvement in agricultural development as a means to stimulate economic growth in Mexico began in 1933, but with the initiation of land redistribution efforts undertaken by President Lazaro Cardenas' government beginning in 1934, the Mexican political climate was deemed to be unreceptive to RF's ideas. However, with the election of President Manuel Avila Camacho in 1940, a conservative committed to expanding Mexico's industrial base, dialogue between RF and the Mexican government on the subject of agricultural modernization was once again deemed viable.¹⁰

RF received further encouragement that same year from American Vice-President elect Henry Wallace, who had become concerned with what he also perceived to be a correlation between widespread Mexican poverty and anachronistic agricultural methods constraining production. Wallace's views were invariably influenced by his own experience as a farmer and the co-founder of the Hi-Bred Company. Established in 1926 to produce the new hybrid corn varieties that would dramatically increase yields in the United States, Hi-Bred would later evolve into Pioneer Hi-Bred, the largest producer of hybrid seeds in the United States. Described by Bruce Jennings as the "father of industrialized agriculture" and the "arch-typical progressive," Wallace's views on agriculture effectively complimented those of RF leadership.¹¹

While the United States government as a whole initially expressed little interest in this issue, Wallace did persuade RF President Raymond Fosdick, Regional Director of Public Health

⁹ Bruce Jennings, *Foundations of International Agricultural Research: Science and Politics in Mexican Agriculture* (Boulder: Westview Press, 1988): 45-46.

¹⁰ Jennings; Joseph Cotter, "The Rockefeller Foundation's Mexican Agricultural Project: A Cross-Cultural Encounter, 1943-1949," in *Missionaries of Science: the Rockefeller Foundation and Latin America*, ed., Marcos Cueto (Bloomington: Indiana University Press, 1994), 97-98.

¹¹ Jennings, 47; Perkins.

John Ferrel, and Director of the Natural Science Program Warren Weaver to explore ways in which the foundation could help Mexican farmers. RF assembled an initial survey team comprised of a geneticist, soil specialist and plant pathologist to assess Mexico's needs for a future RF project. The group toured Mexico in 1941 and recommended that RF establish an advisory group to the Mexican Dept of Agriculture with expertise in agronomy and soil science, plant breeding, plant pathology, entomology and animal husbandry.¹²

Mexico's twenty-year experiment with land reform had failed to solve the country's food security woes. As illustrated by Joseph Cotter, while the country temporarily attained self-sufficiency in maize production by the mid-1930s, government scientists could not offset repeated pest and climate-related challenges, diminishing enthusiasm for the land reform paradigm within the Mexican agricultural science community. In this context, President Camacho and the Foundation entered into a partnership in 1943 with the establishment of the Office of Special Studies (OSS), formally associated with the Mexican Ministry of Agriculture and housed within the National Agricultural College at Chapingo.¹³

The professionals whom RF selected to study, plan and carry out MAP were all products of the land-grant system and, as noted by Deborah Fitzgerald had only one plausible model to refer to for creating a modern commercial agricultural sector: the American experience. OSS was modeled on the state agricultural research station concept and was purposefully partnered with a university to provide an onsite training facility for research fellows.¹⁴ As argued by Edward Oasa and Bruce Jennings, the major difference between RF's role in the United States and that of Mexico and subsequent country programs was that with the establishment of MAP, the Foundation shifted from being a mere philanthropic agency in the field of agriculture to being a manager of the research it promoted.¹⁵

Yet the American template for increasing food production faced a very significant challenge in Mexico: the majority of Mexicans engaged in cultivation were doing so on a small-scale

¹² Perkins.

¹³ Cotter, 101.

¹⁴ Fitzgerald.

¹⁵ Edward K. Oasa and Bruce H. Jennings. "Science and Authority in International Agricultural Research," *Bulletin of Concerned Asian Scientists* 14 (1982): 30-45.

and for subsistence purposes. Mexico's social fabric challenged the core assumptions of RF embedded staff, in that farmers did not attempt make use of their full productive capacity or market their produce commercially.¹⁶ Up until that point, no government, let alone a non-state actor, had attempted to create a scientific infrastructure in a non-industrialized country devoted to improving food crops.¹⁷

To address these concerns, RF recruited Carl Sauer, a geographer from UC Berkeley with many years of experience in Latin America known for his emphasis of social studies as a means of understanding economic problems, to advise on the planning of MAP. Sauer suggested that Mexican peasants' traditional food choices were nutritionally sufficient and were undermined only by financial constraints. According to Sauer's analysis, hunger's determinants in Mexico were not technological in nature but instead the result of political and economic inequities, which nutritional studies conducted by the foundation's own IHD between 1942 and 1945 confirmed.¹⁸ Accordingly, Sauer and another consulting scientist, paleo-botanist Edgar Anderson from the University of Washington, cautioned the Foundation that applying the American model of standardizing a few commercial crops would upset the native economy and culture while diminishing genetic diversity and instead emphasized building on the knowledge of the peasantry.¹⁹

The Foundation's approach to agricultural development would evolve to incorporate the ideas advocated by the likes of Sauer, yet at that time such advice was not heeded. Instead, RF embraced the thinking of Herrell De Graff, the Head of the Social Science Division within the Foundation, who advised focusing on commercial farms as they were more similar to the American model and the required inputs would be less foreign.²⁰

Nick Cullather makes the case and since Mexico was not truly challenged by insufficient production, the country was not in need of agricultural modernization. MAP's true purpose, he argues, was to bring the country into line with the industrial model dominant in the

¹⁶ Jennings, 67.

¹⁷ Perkins.

¹⁸ Oasa and Jennings; Jennings, 52-3.

¹⁹ Oasa and Jennings.

²⁰ Ibid.

United States (i.e. reducing the number of varieties grown) to function as a producer of food products for the American market. Cullather also argues that MAP served as a template for subverting communism that could be sold to Third World countries under the auspices of averting hunger.²¹ As noted by Oasa and Jennings,²² at least one internal Foundation memorandum illustrates that some RF staff were indeed supportive of such a strategy, given that “*Communism makes attractive promises to underfed people.*”²³ Evidence that such sentiment existed within the Foundation has been used effectively to advance the argument that RF functioned as a proxy of American capitalism, with limited autonomy of its own.

MAP was comprised of two main research programs: the first focused on maize, the second on wheat. Both were oriented towards developing varieties that would allow farmers to increase their overall yields without undermining the traditional reuse or trading of seeds.²⁴ In this regard, both programs achieved success with the development of high yielding yet true breeding varieties, which were the result of hybridization but, as is often incorrectly stated, were not true hybrids.²⁵ Indeed both programs illustrate well how the foundation used science-enabled innovation so effectively in this era to attain credibility with development country governments.

Wheat production, for example, increased from an average of 700kg per hectare to over 2000kg per hectare.²⁶ However, because maize was grown predominantly by small-holders on subsistence farms averaging three hectares throughout the country, the economics of scale and the proportionately high costs of required complimentary inputs (namely water, fertilizer, and pesticides) ensured a low rate of adoption of the maize varieties, despite seed being freely available.²⁷ The wheat program, in contrast, led by future Nobel laureate Norman Borlaug, was a resounding success from the foundation’s perspective, based on the ninety percent overall adoption-rate by wheat farmers of the High Yielding Varieties (HYV)

²¹ Nick Cullather, *The Hungry World: America’s Cold War Battle against Poverty in Asia* (Cambridge: Harvard University Press, 2010).

²² Oasa and Jennings, 39.

²³ E.C. Stakman, Richard Bradfield, and Paul Mangelsdorf, “The World Food Problem, Agriculture, and the Rockefeller Foundation,” *Mimeo* (June 21, 1951): 1-18.

²⁴ Anonymous interviewee 16, December 9, 2010.

²⁵ Anonymous interviewee 3, December 6, 2010.

²⁶ Perkins.

²⁷ Fitzgerald.

and the overall increases in national yields. Unlike the smallholder maize growers, wheat was grown primarily by established commercial farmers on plots averaging seventeen hectares. While certainly a minority of the country's agriculturalists, these farmers were far better positioned to access credit arrangements and adopt the necessary inputs and associated mechanized production tools and took full advantage of the opportunity to do so.²⁸

RF extension program, comprised of farm demonstrations and technical bulletins, also ended up conferring minimal advantage for the majority of Mexico's farmers, again for entirely social reasons. For the predominantly illiterate peasant population, technical bulletins proved to be of little help. At the same time, the Mexican government—acting out of concern that in the post-revolutionary era, the wider public would view the program as evidence of foreign interference in the country's education system—purposefully limited access to farm-based education programs.²⁹

Moreover, while the development of the HYV are generally viewed as being MAP's greatest success given the spectacular increase in yields that their introduction to several Asian countries resulted in, it was the OSS training program that left the greatest long-term impact on the overall management of Mexican agriculture. The program provided an estimated 700 Mexican scientists with training in advanced agricultural techniques, and through fellowships the opportunity for over 200 trainees to attend one of the US land grant institutions for additional training. In doing so the program not only greatly expanded Mexico's agricultural technocratic elite, it ensured that a particular set of ideas related to how agriculture challenges are best addressed which had become dominant in the United States, were now firmly embedded and perpetuated within Mexico's national agricultural bureaucracy. Consequently, MAP illustrates how RF used the construction of epistemic communities to gain policy influence within the countries where it operated during this time period. At the time of MAP's dissolution in 1961, OSS became an entirely Mexican entity, re-branded as the now defunct National Institute for Agricultural Investigations (INIA).³⁰

²⁸ Fitzgerald; Parayil, "Mapping Technological."

²⁹ Fitzgerald; Jennings.

³⁰ Jennings, 103, 139; Fitzgerald, 88.

Furthermore, once the template for MAP was established, RF entered into a series of similar collaborative partnerships with ministries of agriculture in several states across Latin America, Asia and Africa. By 1960, in addition to Mexico, RF staff were working in operational programs or advisory roles related to agriculture in Columbia, Chile, Venezuela, Ecuador, Panama, Nicaragua, Nigeria, Pakistan and India.³¹

One remarkable aspect of the Foundation's history has been the degree to which core-staff have moved from program to program, taking on leadership roles and ensuring consistency in approach across a wide range of political and social contexts. At the request of the Indian government for example, RF initiated the Indian Agricultural Program (IAP) in 1952, which for its first decade was directed by Ralph Cummings Sr., a former manager of North Carolina's Agricultural Research Station.³² As in Mexico, IAP's research program initially focused on establishing national centres of excellence for the improvement of two crops: maize and wheat. The maize hybridization program was initiated in 1955 and directed by U.J. Grant, formerly of the foundation's Columbian program, while the wheat program was established in 1962 by Norman Borlaug, who came to India from Mexico at the personal invitation of B.P. Pal, Director of the Indian Agricultural Research Institute (IARI),³³ and went on to advise on other national wheat improvement programs in Pakistan and Morocco.³⁴ Ignacio Narvaez, who trained under inaugural MAP Director and future RF President George Harrar, became the principal adviser to Pakistan's wheat program, helping the country attain self-sufficiency in wheat production by 1968.³⁵

Invitations from other governments seeking the perceived benefits accrued by Mexico thus provided RF with opportunities to replicate its model and embed within the public service of partner governments, members of what were quickly becoming an international epistemic

³¹ Jennings, 141.

³² Arthur A. Goldsmith, "The Rockefeller Foundation Indian Agricultural Program: Why it Worked," in *Western Philanthropy and Cultural Context: Western Philanthropy in South, East and Southeast Asia in the 20th Century*, eds., Soma Hewa and Philo Hove (Lanham: University Press of America, 1997), 93.

³³ Goldsmith, 85.

³⁴ Jennings, 146.

³⁵ The Ford Foundation .Q & A on Agriculture, Science, and the Developing World - on International Agricultural Research and Training Centers Supported by Rockefeller Foundation and the Ford Foundation. New York: The Ford Foundation. 196; Goldsmith; Warren C. Baum, *Partners Against Hunger: The Consultative Group on International Agricultural Research* (Washington: The World Banks, 1986), 10.

community.

5.2 Innovation in the IO era: The International Agricultural Research Centres

Beginning in the early 1950s, RF began looking at how to strengthen agriculture and food security from a regional perspective, initially focusing its attention on Asia. Capitalizing on the widespread support which existed in this period for the establishment of International Organizations (IOs), RF advanced a proposal in 1954 for an international rice research institute which would focus on fundamental physiological, biochemical and genetic problems. The model change meant moving away from country-specific operation programs constrained by political and geographical boundaries and foreshadowed the eventual bio-molecular revolution, which would again begin to change the face of agricultural development three decades later.³⁶

In 1958 the Ford Foundation (FF), motivated by the potential socio-economic gains associated with agricultural development, entered into a 15-year partnership with RF to fund the development and operation of the International Rice Research Institute (IRRI). While FF contributions would be limited to being largely monetary in nature, RF's primary responsibility was to provide the necessary expertise to lead a facility with a complex and novel mandate. The Foundations were attracted to the Philippines because of its perceived political stability and robust post-secondary infrastructure and had engaged in preliminary discussions with the national government about situating the institute on lands bordering the University of the Philippines' College of Agriculture at Los Banos. In 1960 IRRI was formally established at this location through a national act that provided it with perpetual tax immunity. The initial US\$ 7,510,000 cost of constructing IRRI was paid for via FF grants, although by 1964 the Foundations had agreed to divide costs equally, with RF assuming responsibility for the its operations and staffing.³⁷

IRRI was expected to engage in adaptive research to meet regional needs as well as provide technical assistance to countries for specific projects upon request. Training would also be

³⁶ Baum, *Partners Against Hunger*, 13-14.

³⁷ *Ibid.*, 16-17.

an important aspect of its work, and IRRI and all subsequent International Agricultural Centers (IARCs) would be affiliated with a university to facilitate this.³⁸ IRRI's success would be measured in terms of its applications and quickly produced important innovations, including the rice variety IR8, developed from germplasm originating in China, Taiwan, and Indonesia and dubbed "miracle rice" for its associated high yields.³⁹

It has been suggested that because the United States government was so determined to see Vietnam's rice production increased to thwart any potential sympathy for communism arising from hunger, it was willfully blind to the fact that the inputs required to sustain these high-yielding rice varieties were not available for South Asia's smallholders.⁴⁰ This does detract however from the argument that through IRRI, the Foundation was once again and this time on a larger scale actively engaged in creating governance structures which shaped how agricultural challenges and food security were understood and addressed by governments. At the same time, a means of ensuring that those specific ideas and strategies were perpetuated within educational institutions intended to serve those same governments was also devised.

Between 1963 and 1969, three additional IARCs would be established and RF would be the driving force behind each one. After visiting IRRI in 1962, Mexico's President Lopez Mateos expressed an interest in seeing a similar research centre specifically focused on maize and wheat improvement, situated on Mexican soil.⁴¹ RF's initial attempt in 1963 to create the International Corn and Wheat Research Institute in partnership with the government of Mexico never got off the ground. This was due in part to the Mexican government's hesitancy to devote resources to a research organization intended to benefit other countries, and RF reservations of sharing administrative responsibilities with political appointees as opposed to technical experts. The proposal ultimately fell through when, according to Jennings, unnamed prospective donors expressed reservations about a single government

³⁸ Baum, *Partners Against Hunger*, 17; The Ford Foundation, 2-3.

³⁹ Govindan Parayil, "The Green Revolution in India: A Case Study of Technological Change," *Technology and Culture* 33, no. 4. (1992): 737-756.

⁴⁰ Cullather; Oasa and Jennings.

⁴¹ Baum, *Partners Against Hunger*, 18.

having a formal role in the management of what was intended to be an international institution.⁴²

The arrangement between RF and Mexico was re-structured in 1966, with the International Centre for the Improvement of Corn and Wheat (hereafter referred to by its Spanish acronym CIMMYT for Centro Internacional de Mejoramiento de Maíz y Trigo), reformulated as a private corporation that was eligible to receive unlimited funds from any source. While initially housed at the former MAP facilities in Chapingo, the centre was relocated to its present site of El Batán on lands provided by the government, with additional facilities made available in the states of Vera Cruz and Mexico. Moreover the initial staff complement was comprised of former MAP employees including Borlaug, and the former head of the maize program, Edwin J. Wellhausen, who became CIMMYT's inaugural Director-General.⁴³

The third IARC created was the Institute of Tropical Agriculture (IITA) mandated to focus on improving crops associated with the humid low-level tropics (ie. cow-peas, yams, sweet potatoes and cassava) and to develop solutions to relevant ecological challenges. IITA was from the start, a joint RF-FF venture, and with minimal involvement from Nigeria's government, which was pre-occupied with the country's civil war. The institute was formally established through governmental decree in 1967 and situated on government land beside the University of Ibadan with no expectation of rent on the condition that the Foundations supported its operation for fourteen years. RF once again assuming responsibility for staffing the institute and appointed University of Minnesota Dean Will M. Myers (who would later become RF Vice-President) as the inaugural IITA director.⁴⁴

The International Centre for Tropical Agriculture (CIAT) was the fourth and final IARC launched solely by exclusively private funding, evolving out of cooperative program between RF and the Columbian government that had been initiated in 1950. The centre was mandated with providing research and training services for the lowland tropical regions of

⁴² Jennings, 142.

⁴³ Baum, *Partners Against Hunger*, 18-19; Jennings 142-143.

⁴⁴ Baum, *Partners Against Hunger*, 19-21.

the Americas, which were hampered by highly acidic soils and ecologically fragile environments. While RF initially provided all capital and operating costs, FF became an equal partner in 1969. CIAT's initial staff cohort—including Ulysses Grant, who was appointed the inaugural Director—was once again drawn largely from RF's pre-existing in-country agricultural program.⁴⁵

The IARCs have demonstrated that public sector capacity to innovate through science plays an important role in helping smallholders ensure their harvest in the face of ecological adversity. Beginning in late 1970s for example, the spread of the Cassava Mealy Bug (*Phenacoccus manihoti*) threatened cassava farming across the continent. In the early 1980s, IITA coordinated what proved to be successful efforts to control the pest via controlled releases of an imported wasp parasitoid, which is now a classic example of effective biological pest control.⁴⁶ Likewise, ground-breaking research relevant to producing rice, peas, sweet potato and the highly relevant drought-tolerant maize tailored to the varied conditions of Africa has been carried out by the West African Rice Development Association (WARDA), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), the International Potato Center (CIP) and CYMMIT respectively.⁴⁷

Perhaps the more important lesson however is that with establishment of the IARCs, the RF succeeded in enabling the development of an international institutional framework for agricultural development which it itself devised, and which was initially led by former members of its staff and the epistemic communities it supported.

5.21 From International to Global Governance: Private Diplomacy and the Establishment of the CGAIR

By 1968, it was apparent that RF and FF's annual financial commitments of up to US\$ 750,000 per year from a designated pool of US\$ 30 million would be inadequate to sustain the centres' needs and a decision to seek public funds was made. The idea of a consultative

⁴⁵ Ibid., 21-22.

⁴⁶ A.P. Gutierrez, P. Neuenschwander, F. Schulthess, H.R. Herren, J.U. Baumgaertner, B. Wermelinger, B. Lohr, and C.K. Ellis, "Analysis of Biological Control of Cassava Pests in Africa. II. Cassava Mealybug *Phenacoccus manihoti*," *The Journal of Applied Ecology* 25, no.3 (1988): 921-940.

⁴⁷ Anonymous interviewee 18, February 10, 2011.

group, according to Warren Baum “was conceived as an informal, voluntary association of donors that reviews the centres’ programs and budgets, provides their funding, and sets priorities for future research and action.”⁴⁸

Initial meetings were held at RF’s New York offices between the Presidents of RF and FF, the heads of the Food and Agricultural Organization of the United Nations (FAO), the United Nations Development Program (UNDP) and the World Bank. The meetings expanded to include representatives from American, Canadian, Swedish and British development agencies, and several regional development banks at four successive conferences held at RF’s Villa Serbelloni in Bellagio, Italy between 1969 and December of 1970. Those attending shared a common concern over perceived limitations in the productive capacities of agricultural sectors in regions of the world marked by high population growth rates.⁴⁹

Internationalist technocrat and then-World Bank President Robert McNamara played a key role in lobbying the World Bank, UNDP and FAO to support the proposal for a consultative group by acting as its co-sponsors. Despite an eventual budget comparable to that of WHO and FAO with a greater number of employees and a broad mandate to review and coordinate the provision of funds for maintaining a global system of agricultural research, from its founding until the first decade of the twenty-first-century, the CGIAR remained an informal network with no legal status or formal voting process.⁵⁰ While the group’s chairman would be appointed by the World Bank, CGIAR purposefully avoided the exclusionary structure of traditional IOs by not placing restrictions on membership, so long as organizations could pay the minimum half million-dollar membership fee.

The informality of the system also allowed IARC autonomy to be preserved. Maintaining their own individual boards of trustees and scientific staff, the centers were nonetheless united in their overall mandates, that being to provide research and development,

⁴⁸ Baum, *Partners Against Hunger*, 3, 25.

⁴⁹ Baum, *Partners Against Hunger*.

⁵⁰ GRAIN and RAFI, “CGIAR: Agricultural Research for Whom?” *The Ecologist* 26, no. 6 (1996): 259-270; Baum, *Partners Against Hunger*.

information dissemination and specialized training to developing countries with the ultimate goal of increasing the production of agricultural crops across the developing world.⁵¹

In 1967, RF and FF had committed themselves to providing US\$ 750,000 per year to each of the four centres, which was soon after determined inadequate. A solution to this funding challenge was reached the following year when the Foundations were successful in leveraging more significant commitments from other wealthier donors, such as the United States, Canada and the Development Assistance Committee of the Organization for Economic Co-operation and Development (OECD). Despite maintaining representation on the CGIAR's board of directors, both Foundations began to scale back their contributions by the mid-1970s. However as noted by Baum, RF continued to serve as CGIAR's intellectual guide.⁵²

The first four IARCs were projects that were initiated by private actors for the expressed benefit of the public good. With the advent of CGIAR, however, the lion's share of the funding burden was assumed by public actors (Northern states and development banks). Consequently, it is fair to say that IRRI, CIMMYT, IITA, and CIAT, and the initial CGAIR structure were all born of a private vision of the public good, which was embraced by both the eventual benefactor and beneficiary states.

CGIAR is a clear example of RF's early use of private diplomacy to facilitate the realization of an international framework focused on the provision of public goods. Moreover with this passing of the baton, the system as a whole became a part of the public sector, even though—as will be clearly demonstrated in chapter 7—private actors continue to be instrumental to its operations.

5.22 Discursive, Instrumental and Structural Power via the CGIAR

CGIAR provided RF with agenda-setting power in the governance of global agricultural development that was indirect but real nonetheless. Through its country-level operations and

⁵¹ Baum, *Partners Against Hunger*, 190-4.

⁵² Baum, *Partners Against Hunger*, 24-26.

the establishment of the first four IARCs, the Foundation had already facilitated the creation of an epistemic community that was leading international agricultural research. Through the CGIAR, the Foundation provided an institutional template within which that same epistemic community was granted an agenda-setting role, which was embraced with minimal alteration by donor states and their IOs' states. Consequently, RF attained discursive and instrumental power by-proxy, which for an organization that strives for apolitical status is clearly preferable to any kind of formal authority.

This structural power by-proxy is exemplified in the role played by the Technical Advisory Committee (TAC) within CGIAR from its establishment in 1971 until the mid-1990s, when externally imposed changes to how the organization was funded diminished its agenda-setting role. In the twenty-five years preceding this change, a small group of agricultural scientists drawn from the leadership ranks of IARCs wielded tremendous influence, as the following discussion serves to illustrate.

In the lead up to CGIAR's formation, Robert McNamara made clear that he shared RF's longstanding belief that bureaucrats made poor decisions and supported the idea that specialists as opposed to political representatives should be allowed to shape CGIAR's overall research agenda. This decision was not challenged because of the CGIAR's broad parameters, decentralized governance structure, and funding scheme provided a high degree of flexibility for both donors and researchers.⁵³

Two types of funding were established: (i) Core Unrestricted Contributions, which centers could spend as they saw fit; and (ii) Special Project Funds, which were time-bound from individual donors for projects specific to the specialties of individual centres. TAC would develop five-year plans with each of the centres. Independent centers could then choose their projects, while independent donors could choose which centres they wanted to fund. The World Bank in turn acted as the donor of last resort by providing sixty to seventy percent of core funding and twenty-five percent of unrestricted funding for the centres' programs, ensuring that any imbalances were corrected so that all centers received the

⁵³ Anonymous interviewee 16, December 9 2010.

required funds. If donors, for example, wanted to fund IRRI's plan in its entirety, then IRRI's core World Bank funding would go to other centres whose programs did not attract sufficient donor contributions. Under this scheme, the bilateral donor's preferences were met, while centres were permitted to pursue their work, only being subject to review every five years by TAC.⁵⁴

However in the mid-1990s the World Bank ceased functioning as the donor of last resort and donors' commitment to core funding was gradually reduced to twenty to thirty percent, fundamentally changing the model and greatly reducing the influence of TAC. The changes meant for example that TAC approving a five-year plan did not necessarily mean that the money would be there to fund it. The centres had to find funding to cover the core funding shortfall on their own, which meant increasingly adjusting research plans to accommodate donor interests, and that some centres had substantially more funds to work with than others.⁵⁵

In the original system engineered by RF, TAC determined research agendas and ensured the requisite funds for each centre by evenly distributing donor funding and filling in gaps with supplemental funding from the World Bank. When that system changed, it greatly reduced the power of the TAC. The Independent Science and Partnership Committee, TAC's successor, has minimal influence today whereas donors have a significant amount of influence.⁵⁶

However, while the system lasted, TAC had agenda-setting power, a model laid out by RF in the planning of CGIAR, which ensured that decisions over long-term international agricultural research trajectories were determined by the same group of scientists whom the Foundation provided training for and were united by a common set of ideas related to the determinants of and solutions to agricultural challenges and a lack of food security in

⁵⁴ Ibid.; Anonymous interviewee 3, December 6, 2010.

⁵⁵ Anonymous interviewee 16, December 9, 2010; Anonymous interviewee 3, December 6, 2010.

⁵⁶ Anonymous interviewee 19, November 29, 2010.

developing countries. While this was accomplished indirectly, power that hinges on the ability to embed ideas and beliefs is power nonetheless.⁵⁷

5.3 Adaptation in the Neo-Liberal Era: Innovating Around an Expanding Biotechnology Industry

With many well established national research programs and a well-funded network of specialist regional research centers now in place, RF made the eventual decision to end operational programs in the 1980s.⁵⁸ This is not to say that RF staff felt public sector agricultural research institutes would not need to partner with industry in the neo-liberal era. As in public health, changes in the global economy would soon make agricultural development-oriented Public-Private Partnerships (PPPs) a necessity although for very different reasons. Whereas governments purposefully ceded responsibility for the development of essential medicines and vaccines to the private sector to reduce costs, a robust network of public sector research institutes existed in the form of IARCs to innovate agriculture for the world's poor. Yet the birth of molecular biology as a discipline and alterations to US patent law were fundamentally changing the private sector's role in delivering products to the farmer on a global scale.⁵⁹

The industrial side of modern agriculture has always been a private sector affair. In the era of MAP, the only way firms could make money in agriculture was through the sale of hybrid seeds,⁶⁰ and associated chemical inputs. Most of the plant breeding at that time however was being done in the public sector, and once promising candidates were identified, they were turned over to the private sector for multiplication and production.⁶¹

Yet the emergence the biotechnology industry and legal frameworks created to assure the global dominance of Northern and particularly American firms was effectively already working against the capacities of public sector research entities to employ cutting edge

⁵⁷ Michael Barnett and Robert Duvall, "Power in International Politics," *International Organization* 59, no. 1 (2005): 39-75.

⁵⁸ Anonymous interviewee 3, December 6, 2010.

⁵⁹ Anonymous interviewee 16, December 9, 2010.

⁶¹ Ibid.

molecular technologies to improve crop varieties used by poor farmers, and threatening to constrain the public agricultural research systems RF had helped enable.

As articulated by Susan Wright, the basis for a viable biotechnology industry came in 1974 when the University of California, San Francisco's Herbert Boyer and Stanford's Stanley Cohen demonstrated for the first time that genes from markedly different species could be combined to produce novel organisms.⁶² Applied to agriculture, recombinant DNA (rDNA)⁶³ technology would eventually mean the development of cultivars modified to express traits unattainable via conventional breeding methods, including but not limited to resistance to pesticides, insects or microbial pests, and accelerated growth.⁶⁴

It is important to note that this industry emerged within the United States and was driven by the United States government. As noted by Wright, by the late 1970s the country was quickly losing its long held competitive advantages in the textile and automotive industries, at the same time that the price of foreign oil was increasing.⁶⁵ In this context, the fledgling biotech industry was afforded considerable political protection through amendments to American laws. This began with the passing of the United States Plant Protection Law in 1972, which fundamentally changed the role of the private sector in agricultural development by allowing for the patenting of plants,⁶⁶ and was dramatically accelerated in 1979 when Congress loosened statutory controls governing genetic engineering-related research.

⁶² Susan Wright, "Recombinant DNA Technology and Its Social Transformation, 1972-1982," *Osiris* 2 (1986): 303-360.

⁶³ It is important to note the rDNA technology—commonly referred to as genetic engineering (GE)—is only one form of biotechnology; the latter being a blanket term for a number of processes including but not limited to (i) *Tissue culture*, the crossing species that would otherwise not cross in nature to incorporate different sets of desired traits; (ii) *Embryo rescue*, whereby embryos containing desired genes are transferred via tissue culture into whole organisms to complete their development; (iii) *Marker assisted selection*, which allows for determining whether the desired trait(s) is present in a new cross without having to go through full growing cycle; and (iv) *Somatic hybridization*, the direct mixing of DNA from different organisms accomplished through the removal of cell walls and regeneration of whole organisms through tissue culture. For more on this see Robert Herdt, "Biotechnology in Agriculture," *Annual Review of Environment and Resources*, 31 (2006): 265–95.

⁶⁴ Eric S. Grace, *Biotechnology Unzipped: Promises and Realities* (Toronto: Trifolium Books Inc., 1997); Wright, V. Lehmann, "Biotechnology in the Rockefeller Foundation's New Course of Action," *Biotechnology and Development Monitor* 44, no. 45 (2001): 15-49.

⁶⁵ Wright,

⁶⁶ Anonymous interviewee 16, December 9, 2010.

1980, however, would prove a defining year for what had up until that point been an area of research advanced predominantly by public funds. A critical legal precedent was established in that year by the US Supreme Court in *Diamond vs Chakrabarty* through its ruling that novel organisms created by recombinant methods could be patented. Significantly The Patent Trademark Amendment Act (more commonly known as the Bayh–Dole Act) was passed to promote the uptake and commercialization of federally funded research within universities, small businesses, and not-for-profit organizations.⁶⁷ The logic of Baye-Dole was that restricting access to those willing to pay would provide a new means of measuring the utility of public sector innovation.⁶⁸ However the larger ramifications were that many end products and enabling technologies created with public funding were effectively no longer “public goods,” but instead the proprietary technology of for-profit entities made available at their discretion only through restrictive conditions spelled out in Material Transfer Agreements (MTAs).⁶⁹

While large, primarily American Multinational Corporations (MNCs) from the oil, pharmaceutical and agrochemical sectors began to aggressively acquire biotechnology start-ups, the National Science Foundation began offering incentives in the form of grants and tax shelters for university-industry partnerships focused on rDNA research. Relatively small investments provided firms with access to state of the art knowledge and worldwide rights to market and produce products, thus protecting their market share and controlling the sector’s research agenda.⁷⁰

The rise of the biotechnology industry presented RF with several new cultural hurdles to work around. One of these was a normative shift among scientists away from sharing a common purpose of creating and disseminating public knowledge and goods informed by advances in science. In the same way that Intellectual Property (IP) rights are in total contrast to the history of subsistence and rural agriculture, where farmers traditionally share

⁶⁷ Wright; Gary Toenniessen, “Maintaining the Public Sector’s Essential Role in Crop Varietal Improvement,” *Bio-Science Law Review* 7, no. 1 (2005): 68-70.

⁶⁸ Anonymous interviewee 20, June 8, 2011.

⁶⁹ Toenniessen; see also D.G. Graff, S.E. Cullen, K.J. Bradford, P. Zilberman, and A.B. Bennett, “The Public-Private Structure of Intellectual Property Ownership in Agricultural Biotechnology,” *Nature Biotechnology* 21 (2003): 989-995.

⁷⁰ Wright.

seeds and knowledge, a shift towards privatization and profit within molecular biology was contradicting the traditional academic principles of sharing information to advance knowledge.

The migration of numerous molecular biologists and scientists from the public to the private sector marked a normative shift for RF, which had spent decades constructing an international community of agricultural scientists committed to SEI in public sector arenas. As illustrated by Wright, the commercialization of rDNA technology had a profound impact on the culture of an entire academic discipline. Prior to the rDNA revolution, molecular biology subscribed to the same general academic principles as other scientific disciplines: an ethos of cooperative effort for the purpose of knowledge generation and dissemination. Yet following the Stanford patent applications in 1974, the ethos of communal sharing for the advancement of knowledge was rapidly displaced by privatization and profit as the dominant norm in molecular biology. By the late 1970s, with its strong links to business at both at the personal and institutional level, and little criticism coming from within the discipline, molecular biology as a whole was heavily invested in biotechnology industry.⁷¹

5.31 Maintaining public sector capacity in agricultural science: The International Program on Rice Biotechnology

Despite RF's catalytic role, the research that had driven the Green Revolution was carried out within the public domain and was funded predominantly by public monies for the benefit of the public good. While public sectors supported the emergence of rDNA technology, the biotechnology industry has been from its inception inherently market-driven, with the goal of maximizing returns for those investing in its development.⁷²

The structural power afforded to the industry in the form of Intellectual Property Rights (IPRs) posed a challenge for the IARCs, which were mandated with developing improved crop varieties of little interest to firms and for those with limited purchasing power.⁷³ The

⁷¹ Wright.

⁷² Parayil, "Mapping Technological."

⁷³ Toenniessen.

centres were still fulfilling their intended purpose as evidenced by the over 8000 crop varieties developed between 1960 and 2000 being grown in over one hundred countries.⁷⁴ Their impact has been particularly important to Asia, where these varieties are planted in approximately seventy-five percent of cultivated land farmed predominantly by small-holder farmers, and where the proportion of the population suffering from chronic hunger decreased from forty percent to less than twenty percent in this time period.⁷⁵

RF has long pushed for keeping IP that is relevant to its development goals within the public domain.⁷⁶ Applied to agriculture, this has meant expressing support for the Plant Variety Protection model, which previously allowed breeders to modify existing varieties without having to paying royalties while still recognizing innovators' rights to market their products.⁷⁷

The globalization of a patent-based system in plant breeding was a key reason that upon ceasing its country specific programs, RF's agricultural focus began focusing on broadening the agricultural applications of biotechnology geared towards the needs of the global South, and increasing the number of Asian and African public sector scientists trained in advanced molecular techniques via RF fellowships.⁷⁸ The cornerstone of this effort was the International Program on Rice Biotechnology (IPRB), which over its seventeen-year lifespan beginning in 1984 focused on building public sector capacity in advanced molecular techniques in low and middle-income countries by linking fledgling national developing country programs with established rice biotechnology programs in United States, Japan, Europe and Australia, and sponsoring path-breaking genomic research on rice, which laid the groundwork for later innovations such as Golden Rice.⁷⁹ Through this model of epistemic expansion on a global scale, advanced biotech-related training was provided to an

⁷⁴ R.E. Evanson and D. Gollin, "Assessment the Impact of the Green Revolution: 1960-2000," *Science* 300, no. 5620 (2003): 758-762.

⁷⁵ Toenniessen, 1-2.

⁷⁶ Anonymous interviewee 1, November 19, 2010.

⁷⁷ Lehman.

⁷⁸ Anonymous interviewee 21, February 8, 2011.

⁷⁹ Golden Rice refers to a genetically engineered variety of *Oryza sativa* developed with multiple donated licenced technologies; its bio-availability of beta-carotene (a pre-cursor to Vitamin A) is better than any other crop tested.

estimated 400 African, Asian and Latin American scientists, and advances were made that have benefited millions of farmers and hundreds of millions if not billions of individuals.⁸⁰

IPRB's utility has been reinforced by the fact that since the first transgenic crops were commercialized in 1996,⁸¹ other than maize, wheat, soybeans, and rice with their proven profit margins, the big seed companies have demonstrated little interest in modifying the crops traditionally grown by poor, rural, or subsistence farmers in developing countries, such as cassava, millet, sorghum, yams and legumes.⁸² While private sectors are emerging in countries such as Brazil, China, and India,⁸³ which are showing an interest in filling some of these gaps,⁸⁴ the commercial interests of big seed companies remain restricted to globally traded crops because this is where their profits lie.⁸⁵

5.32 Adapting to the Privatization of Knowledge: Innovating Around Intellectual Property Rights

The global diffusion of IPRs has been an exercise in American coercion that has enabled the country's biotechnology companies to attain market dominance. IPRs are significant because they allow creators or inventors to exclude others from copying or using their work or invention without permission or payment. Their proponents argue that they provide incentive and reward for innovation;⁸⁶ however in the context of commercial agriculture where maximizing profit works against crop diversification, their critics suggest that the opposite is in fact true.⁸⁷ Others have argued that IPRs are akin to new form of feudalism, by denying farmers the right to re-use, lend, share or give away seed. Furthermore, because applying for, contesting or upholding patents is a time consuming and expensive process,

⁸⁰ J. O'Toole, Gary Toenniessen, T. Murashige, R. Harris, and Robert Herdt, "The Rockefeller Foundation's International Program in Rice Biotechnology," in *Rice Genetics IV*, eds., GS Khush, DS Brar and B. Hardy (Los Banos: New Delhi Science Publishers Inc. and International Rice Research Institute, 2001), 39-59.

⁸¹ C. James, "Global Status of Commercialized Biotech/GM Crops," *The International Service for the Acquisition of Agri-biotech Applications (ISAAA)* no. 13 (Ithaca: ISAAA, 2007).

⁸² M.J. Chrispeels, "Biotechnology and the Poor," *Plant Physiology* 124 (2000): 3-6.

⁸³ Anonymous interviewee 19, November 29, 2010.

⁸⁴ James.

⁸⁵ Anonymous interviewee 22, November 12, 2010.

⁸⁶ Anonymous interviewee 6, June 23, 2011; Anonymous interviewee 9, July 12, 2011.

⁸⁷ R. Neumann, *Making Political Ecology* (London: Hodder and Arnold, 2005).

those countries lacking significant financial resources are excluded from the rule-setting process.⁸⁸

At the international level, there are now three conventions that relate to IPRs,⁸⁹ each of which is informed by different norms and governed by different rules.⁹⁰ The framework that has proven the greatest challenge for science-enabled innovators working within CGIAR system and endowed corporations with tremendous power over what technologies are made available for humanitarian purposes is the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

The concept of TRIPS originated within a small number of developed states and handful of MNCs with the United States being its strongest proponent.⁹¹ Negotiated during the Uruguay round of the General Agreement on Tariffs and Trade, TRIPS came into force as part of the establishment of the World Trade Organization (WTO) in 1995. The agreement demands that WTO members—the majority of the world’s states—provide a minimum level of protection for the IP of corporations, with non-compliance bringing the risk of economic sanction. Developing countries had until 2006 to comply with TRIPS,⁹² and those such as Zambia, which attempted to restrict the importation of transgenic cultivars on the basis that IPRs limit access to affordable food and threaten a loss of livelihood and income,⁹³ have seen their arguments dismissed by WTO on the grounds that such restrictions represents unjustifiable trade barriers.⁹⁴

⁸⁸ Geoff Tansey, Trade, Intellectual Property, Food and Biodiversity: Key Issues and Options for the 1999 Review of Article 27.3(b) of TRIPS Agreement (Geneva: Quaker United Nations Office (QUNO), 1999).

⁸⁹ These are (i) TRIPS (WTO); (ii) The Convention on Biodiversity (UNEP); and (iii) The International Treaty on Plant Genetic Resources (FAO.)

⁹⁰ Anonymous interviewee 16, December 9, 2010.

⁹¹ Tansey, Geoff.

⁹² Toenniessen, Gary. “Maintaining the Public Sector’s Essential Role in Crop Varietal Improvement.” *Bio-Science Law Review* 7, no. 1 (2005): 68

⁹³ Jennifer G. Cooke and Richard Downie, *African Perspectives on Genetically Modified Crops: Assessing the Debate in Zambia, Kenya, and South Africa: A Report of the CSIS Global Food Security Project* (Washington: Centre for Strategic and International Studies, 2010) 9.

⁹⁴ Peter Newell and J. McKenzie, “Who’s rules rule? Development and the Global Governance of Biotechnology,” *IDS Bulletin* 35, no.1 (2004): 82-92.

The rights of developing countries to self determination has been undermined by changes in international law related to IPRs, and the United States and MNCs have been the driving force behind these changes. One of the RF's successes in agriculture-related private diplomacy in the neo-liberal era has been to convince prospective corporate partners to consider how their choices impact the smallholders of poor countries and more importantly make their intellectual property available for the greater good in poor countries. Biotechnology-based crop improvement revolves around having this access, for increasingly even the molecular tools commonly employed in innovating through science are under patent. RF has championed the PDP approach in agriculture because the only alternative for prospective innovators is that change in the international rules governing the use of intellectual property be made, which the Foundation and its intended beneficiaries are in no position to undertake themselves. Via the enablement of PDPs, RF's primary contribution to global governance specifically focused on agricultural development has been a capacity to catalyse institutional innovation that has benefited historically marginalized populations in the absence of structural changes to the dominant global power structure.

Diplomatic efforts preceded formal partnership construction in RF's efforts to engage the private sector in pursuit of facilitating access to proprietary technology to strengthen agricultural sectors in developing countries. One of the more notable examples of this private diplomacy related to the application of Genetic Use Restriction Technologies (GURT), which were first patented in 1994 by Monsanto and labeled terminator seeds because of the sterility of the end products. In fact by 1998 the technology had expanded to include control over numerous aspects of gene expression in patented plants, the viability of which would be contingent on the application of proprietary inputs, which was characterized by critics as equating to "bio-serfdom."⁹⁵

In June of 1999, British agro-ecologist Gordon Conway, who the previous year had been appointed RF President, was invited to speak to the Monsanto board. Conway leveraged the opportunity to advocate that Monsanto embrace a host of new progressive policies. These

⁹⁵ Rural Advancement Foundation International. 1998. "Dead Seed Scroll?: The USDA's Terminator Defense." <http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/395/01/rafitransalatordeadseedscroll.pdf> : 1-10. Accessed: 04/07/2010

included acceptance of regulatory demands such as the adoption of labeling genetically modified organisms, phasing out the use of antibiotic resistance markers, granting free exchanges of germ plasm to and from the IARCs, allowing for tiered pricing to reflect variation in global capital availability and granting free licensing of existing patents to poor countries in order ensure such states had the capacities feed their citizens. Moreover Conway explicitly suggested that Monsanto had a role to play in reducing global economic inequality and called for the company to disavow the use of GURT:⁹⁶

Trying to ensure a future that includes the poor and excluded is not only a huge job, it is, you may say, not Monsanto's job. Monsanto's job is to provide a decent return to your shareholders by running a sustainable, innovative and responsible enterprise. But the future of the poor and excluded is an important part of the context in which you do your job. We all need to take it on as a shared goal-a shared problem. It is a problem requiring collective action and decision making, without a clear process, without clearly defined interests, without a model of how to do it, and without any one entity in charge. We must all play our part....The agricultural seed industry must disavow use of the terminator technology to produce seed sterility. Astra Zeneca has apparently already promised to do so (in a letter to Action Aid, the British charity). You have said that you will not exploit these patents until there has been a full, independent review of the impact of the technology but I believe you should now follow Astra Zeneca's example.⁹⁷

While Monsanto ultimately did not adopt the majority of these suggestions, three months after Conway's speech Monsanto President Robert Shapiro committed the company to abandon its plans to commercialize GURT, a decision that surprised and dismayed the USDA, which publicly urged them to reconsider their change in policy, albeit to no avail.⁹⁸

RF has understood that as a rule, shareholders' interests inform corporate policies. Consequently, the private sector is not interested in developing products where there is no clear potential for profit. Small-scale farmers and many of the crops that they grow, not only in the South but also the North (e.g. rice, potatoes and tomatoes), are not attractive markets for seed companies given their small profit margins and the limited volumes grown. Accordingly, there remains a very important role for the public sector and particularly

⁹⁶ Anonymous interviewee 19, November 29, 2010; Gordon Conway, "Genetically modified crops: risks and promise", *Conservation Ecology* 4, no. 2 (2000): [online] <http://www.consecol.org/vol4/iss1/art2/>

⁹⁷ Conway, "Genetically modified crops: risks and promise."

⁹⁸ Anonymous interviewee 19, November 29, 2010.

universities in developing specialty crops for farmers that are not of interest to big corporations, for example strawberries with a longer shelf life.⁹⁹ Unfortunately many public sector institutions do not have the IP portfolios or financial ability to get such crops through the process of regulatory approval. Mirroring the harmonized regulation of pharmaceuticals, industry, and unwittingly NGOs, have promoted the internationalization of very costly regulatory processes, which often works against the realization of innovation and the production of public goods relevant to both health and agriculture.¹⁰⁰

Consequently, from RF's perspective, cooperation with industry is essential not simply to bring the innovative capacity of the private sector to bear on creating health or agriculture-related public goods intended for use in the developing world, but also to help public sector institutions overcome IPR-related constraints impeding their ability to innovate autonomously. RF's partnering with industry in health preceded that of agriculture, only because the first patentable agricultural products were developed some fifteen years after the commercial applications of biotechnology began to be realized in public health and medicine. Yet once this began to be a factor, the Foundation wasted little time in helping enable through grants the creation of three entities focused on facilitating farmer's access to proprietary technology.¹⁰¹

The first of these three organizations was The Public Intellectual Property Resource for Agriculture (PIPRA), a public consortium launched with funding from the Rockefeller and McKnight Foundations comprised of over twenty land-grant institutions focused on keeping the fruits of research undertaken in public sector universities within the public domain. At the time, the consortium members were being constrained from fulfilling their mandates by exclusive licensing agreements they had entered into with firms in order to commercialize their research. Run out of the University of California at Davis, the consortium was organized around a shared commitment to setting up licensing agreements for future technologies that would allow a pooling of IP and partial ownership, so that technologies could be available for small-scale commercial and humanitarian purposes while still ensuring

⁹⁹ Jamie K. Miller and Kent J. Bradford, "The Regulatory Bottleneck for Biotech Specialty Crops," *Nature Biotechnology* 28 (2010): 1012–1014.

¹⁰⁰ Anonymous interviewee 3, Dec 6, 2010.

¹⁰¹ Anonymous interviewee 19, November 29, 2010.

profit realization for both public and private IP holders.¹⁰² The two other organizations—the African Agricultural Technology Foundation (AATF) and the Africa Harvest Biotech Foundation International (AHBFI)—are also focused on fostering biotechnology-driven product development through cooperation with industry but are exclusively focused on meeting the needs of African smallholder farmers.¹⁰³

5.4 Agency through adaptation in a neglected region: A focus on Sub-Saharan Africa

Beginning in the late 1980s, RF began to shift its agricultural resources from Asia to Sub-Saharan Africa, where a majority of the population’s livelihood and overall food security remained wedded to low input, rain-fed, shifting-cultivation farming. On a continent-wide scale, the ability to address longstanding biological, ecological and technological impediments to agricultural development was being constrained by poor governance. Longstanding government apathy towards agriculture, entrenched corruption and weak political leadership—exacerbated by crippling externally-imposed austerity measures and declining aid budgets—had allowed pests, disease, drought, nutrient poor soils, a lack of mechanization and above all widespread entrenched rural poverty to stagnate agricultural growth for over two decades, effectively making farming in Africa an economic trap.¹⁰⁴

Conway’s book, *The Doubly Green Revolution*, encapsulated the shift in approach through its advocacy of a new Green Revolution specific to Sub-Saharan Africa, premised on contextual specificity, ecological sustainability and equity. Accordingly, new technologies would, from Conway’s perspective, have to be built around local conditions and needs and be supported by local institutions, both governmental and non-governmental.¹⁰⁵ While the Foundation had worked in Africa since the 1960s, the continent now became the primary focus for its efforts in agricultural development. Yet unlike previous country and region specific initiatives, RF’s emphasis on Africa extended beyond research and training to also attempt to address broader market and governance determinants of weak agricultural systems and food

¹⁰² Toenniessen, Gary. “Maintaining the Public Sector’s Essential Role in Crop Varietal Improvement.”: 69

¹⁰³ Anonymous interviewee 19, November 29, 2010.

¹⁰⁴ Anonymous interviewee Ibid; Anonymous interviewee 18, February, 2011.

¹⁰⁵ Gordon Conway, *The Doubly Green Revolution: Food for All in the 21st Century*, (Ithaca: Cornell University Press, 1997), 295-6.

insecurity. This has meant devising governance schemes, which bring together all relevant actors, including for-profit entities.

From the perspective of several former RF staffers, one of the sad ironies of corporate control of biotechnology is that transnational corporations and their supporter states have priced what should be a relatively inexpensive technology out of the reach of the world's poor.¹⁰⁶ According to RF's Managing Director Gary Toenniessen, establishing and staffing a biotechnology program is a relatively inexpensive proposition, approximately half a million dollars, if an organization already has a strong conventional breeding program, which RF effectively demonstrated with rice across Asia through IPRB. All biotechnology does is produce additional traits that still have to be incorporated into the breeding process. But even with this capacity, research organizations still have to pay for patents and go through an expensive regulatory process.¹⁰⁷

Transnational chemical companies prefer to sell inputs (e.g. pesticides) over seeds, as the former have proven utility. Moreover, pesticide production, as per other very hazardous industries, is increasingly concentrated in developing countries with have less strict environmental regulations than the Northern countries where such firms originated, thereby increasing profit margins.¹⁰⁸ However large chemical corporations have also actively bought up seed companies, biotechnology patents and start-ups to protect their markets from competition regardless of whether the technology proves commercially viable. In doing so, however, they have captured technology that has the potential to overcome intractable agricultural problems such as drought and disease. Monsanto is in fact the only MNC that made a major early commitment to developing new forms of biotechnology.¹⁰⁹

To compensate for this reality, RF facilitated the creation of the AATF and the AHBFI as African-based organizations focused on facilitating technology transfer for the benefit of African agriculture. AATF is facilitator of partnerships, pairing African innovators with

¹⁰⁶ Anonymous interviewee 19, Month Day, 2010; Anonymous interviewee 3, December 6, 2010; Anonymous interviewee 21, February 8, 2011.

¹⁰⁷ Interviewee with Gary Toenniessen, December 6, 2010.

¹⁰⁸ Jennifer Clapp, "Foreign Direct Investment in Hazardous Industries in Developing Countries: Rethinking the Debate," *Environmental Politics* 7, no. 4 (1998): 92-113.

¹⁰⁹ Anonymous interviewee 3, December 6, 2010.

Northern firms whose IP is used to create new products for African markets which the original patent holders would have no interest in accessing, without the African innovators having to pay royalties or licensing fees. The organization also aids African states by carrying out biosafety testing, facilitating seed distribution and helping to create local markets.¹¹⁰

AHBFI in contrast is an IP consortium that is actively involved in developing new agricultural products such as nutritionally enhanced sorghum, yet like AATF, AHBFI also revolves around partnering with Northern firms such as Pioneer Hi-Bred and Dupont to gain access to their intellectual property.¹¹¹

Through PIPRA, AATF and AHBFI, the RF has been an enabler of public goods in an era characterized by legal frameworks designed to constrain access to the enabling tools of such goods. Admittedly the end products of the partnerships that the Foundation has enabled do not meet the criteria of the classical definition of a public good,¹¹² in that they limit access to certain groups and tiered pricing means the technologies are still not free. However from the vantage point of Toenniessen, a partial public good that reaches half the people in need is still better than no public good at all,¹¹³ which encapsulates RF's longstanding pragmatism and willingness to work around the preferences of the prevailing world order's most powerful actors in order to meet the Foundation's main end goal: providing public goods to vulnerable populations in developing countries when public sector authorities mandated to fill this role have been unable to do so autonomously.

5.41 The Alliance for a Green Revolution in Africa: Facilitating a global alliance for regional improvement

Despite placing increased emphasis on partnering with firms, RF's commitments to strengthening the capacity of public authorities has remained constant, and AGRA template illustrates this dual focus. Paralleling the creation of AATF and AHBFI, the Foundation began lobbying African governments to ensure that technical capacities exist within national agricultural research centres in both conventional and molecular breeding techniques so that

¹¹⁰ Toenniessen, Gary. "Maintaining the Public Sector's Essential Role in Crop Varietal Improvement.": 69-70

¹¹¹ Anonymous interviewee 23, February 3, 2011.

¹¹² The two defining criteria of public goods are their status as goods that are (i) non-rival (impossible to limit to a certain group), and (ii) non-excludable (inability to pay would not ones limit access)

¹¹³ Interviewee with Gary Toenniessen, December 6, 2010.

the traits capable of addressing pressing biological and ecological constraints and meeting consumer and farmer preferences could be identified and incorporated into local varieties. At the same time, participatory research networks linking farmers with breeders were developed so that experimental varieties could be grown in real world conditions, creating a horizontal research framework that provided farmers with a continuous role in the process of crop improvement.¹¹⁴

On the market side of RF model, small-scale experimentation was initiated to develop local networks of agro-extension dealers, typically comprised of small “mom and pop” retailers to ensure that subsidized seeds and associated inputs—first and foremost chemical fertilizers—were available to farmers on demand in relevant quantities. For if farmers are expected to purchase such varieties, then they have to be able to make a profit. Doubling yields are of little utility if farmers are bankrupted by their inability to pay for the required inputs. Hence AGRA’s market program is premised on the idea that increasing production alone is not a sustainable strategy unless profitability is assured, requiring competent local delivery systems.¹¹⁵

Two more ambitious goals—contingent on the buy-in of national governments which the Foundation began to actively lobby for—were the establishment of technical and in-kind incentives to nurture the growth of private indigenous seed sectors and regulatory reforms related to biosafety and quality assurance.

Regarding the first point, the Foundation assumed that greater numbers of seed companies embracing participatory approaches would ensure an increase in the number of varieties available to farmers in regions marked by great cultural and ecological diversity. The historical lack of competition in African seed markets, the low incomes of most farmers, and a general preference for open-pollinated non-commercial varieties meant that transnational seed companies would continue to show little interest in meeting the needs of poor farmers. At the same time, a small number of previously parastatal monopolistic firms would

¹¹⁴ J. DeVries and G. Toenniessen, *Securing the Harvest: Biotechnology, Breeding and Seed Systems for African Crops* (New York: CABI Publishing, 2001).

¹¹⁵ Anonymous interviewee 3, December 6, 2010.

continue to market as few products as possible to the largest number, despite the fact that seed-sector de-regulation had generally occurred by the early 1990s. Competition among African firms, the Foundation reasoned, could meet the needs of small holders and consumers, but such private seed sectors were limited because investors were lacking.¹¹⁶

Second, RF argued that regulatory modernization was needed to ensure confidence in the quality of seeds produced, and that the requisite biosafety frameworks be in place to regulate products increasingly being created via biotechnology and specifically genetic engineering. At the same time, a pervasive sentiment among the Foundation's staff has been that genetic modification is largely unnecessary in the context of Sub-Saharan Africa. This was due to what was perceived to be the tremendous untapped potential of conventional breeding methods to improve staple crops grown for both subsistence and commercial purposes.¹¹⁷

By attempting to correct for both private and public sector deficiencies, more than ever before the Foundation was explicitly seeking to illuminate the socio-political determinants of the agricultural challenges under scrutiny, including the contradictions of the globalized liberal economic paradigm. Yet, despite these deficiencies and contradictions, the Foundation remained committed to adapting its ideas and finding solutions that would work within that same dominant liberal economic paradigm, while expanding both the applications of science and technology to address challenges of agriculture and the overall influence within the policy process of those individuals generating that knowledge.

RF's approach for a new Green Revolution in Africa differentiates itself from its former approaches to agricultural development, based on its premise that indigenous private sector involvement is critical to rejuvenating agricultural sectors across Africa. This could be interpreted as evidence of the Foundation's liberal economic bias. However, the logic informing this theory is that agriculture is generally a private sector function. Either for personal consumption or for sale, farming is a business; although proponents of AGRA note that historically it had not been treated that way by the development community from a policy perspective. According to Catherine Bertini, a former Executive Director of the

¹¹⁶ DeVries and Toenniessen.

¹¹⁷ Anonymous interviewee 3 December 6, 2010; Anonymous interviewee 19, November 29, 2010.

United Nations World Food Program (WFP), the general consensus within the larger international development policy community is that not only has neo-liberal austerity hurt Sub-Saharan African public sector research capacities, but Sub-Saharan African governments themselves have not paid sufficient attention to agriculture specifically because it is a private sector problem. Optimism over AGRA relates to the fact that it was the first entity that frames agriculture as a private sector issue. A focus on guaranteeing loans that banks might not otherwise make and helping to establish training opportunities for people who are going to sell to farmers, extension agents, who in turn require loans, all illustrate that agriculture is a big circle of activities carried out predominantly in the private domain.¹¹⁸

At the same time, RF clearly understands the critical importance of the state in African agricultural development, which provides the overall delivery system that ensures that improved varieties actually benefit farmers.¹¹⁹ Much of the criticism RF has faced regarding its efforts to strengthen agriculture in Africa relates to its promotion of biotechnology, and specifically genetic engineering.¹²⁰ RF scientists however have been of the opinion that more than any form of advanced science, gains will be made on adequate prices, infrastructure, roads, marketing, financial services, and developing regional approaches to soil and water management, illustrating how integral states remain for agricultural sectors to be successful.¹²¹

¹¹⁸ Interviewee with Catherine Bertini, January 26, 2011.

¹¹⁹ Anonymous interviewee 3, December 6, 2010.

¹²⁰ Eric Holt-Gimenez, Miguel A. Altieri, and Peter Rosset, "Ten Reasons Why the Rockefeller and the Bill and Melinda Gates Foundation's Alliance for Another Green Revolution Will Not Solve the Problems of Poverty and Hunger in Sub-Saharan Africa," *Food First Policy Brief* no. 12 (October 2006).

¹²¹ Anonymous interviewee 19, November 29, 2010; interestingly, Steve Radelet also makes this argument, asserting a case based analysis which posits that effective agriculture sectors that exist in particular African states are the product first and foremost of functioning public sectors made possible by prescient, responsible leaders and stable governments--for more on this point, see Steven Radelet, *Emerging Africa: How 17 Countries Are Leading the Way*, Washington: Center for Global Development, 2010.

5.5 Conclusion

Since former President of the University of Pennsylvania Judith Rodin was appointed President of the RF in 2005, there has been a drastic contraction of RF programs and a reduction in its staff, which has greatly reduced the scope and impact of the agricultural program.¹²² Yet any future uncertainty cannot diminish the tremendous legacy RF has attained as an innovator in science and governance oriented towards strengthening agricultural systems in the global South.

Beginning in the 1930s the Foundation began underwriting high-impacting research in areas such as plant genetics and pathology leading to new and improved regionally specific varieties of staple crops that have proven resistant to devastating diseases such as wheat rust. As longstanding force in science-enabled innovation, the Foundation has gained credibility in policy circles by presenting tangible solutions to longstanding agricultural problems. Yet the Foundation's success as a seller of ideas in the context of twentieth-century agricultural development has also hinged largely on its ability to create, expand and embed within decision-making bodies, communities of experts united in their common set of assumptions regarding determinants of and solutions to pressing agricultural problems. Via its training country-specific training programs, RF has been instrumental in forging and linking agricultural science epistemic communities across the global South. Moreover via the CGIAR and AGRA, the RF has strengthened the role of natural scientists in the governance of agricultural and food security challenges. Consequently, the Foundation's work in agricultural development has helped ensure that particular ways of understanding and addressing complex societal challenges related to hunger have become dominant within national policy making arenas and mechanisms of global governance.

At the same time, RF has demonstrated that it is by no means ideationally static. While the principles, causal beliefs, and notions of validity that informed the foundation's initial approach to agricultural development were forged in the progressive era and informed by the American experience of agricultural modernization, RF steadily adapted its country-level

¹²² Anonymous interviewee 20, June 8, 2011.

and regional training programs to meet the needs of its beneficiaries, situated in unique social and ecological environments.

Finally, RF's use of private diplomacy to facilitate cooperation for the public good displayed in the domain of public health has also been prominent in its agricultural affairs. Its early partnerships with national governments illustrated this well, as did the formation of the CGIAR to the establishment of the first agricultural PDPs. Its attempts to compensate for the United States government's allowance for firms to take ownership of publicly funded research in pursuit of international market dominance demonstrates that it is no mere proxy.

Since the broad potential of biotechnology became clear, RF has never shied away from promoting its many applications to agriculture, taking the position it is an agro-ecological approach as it reduces pesticide loads; potentially increases yields, incomes and food availability; reduces the need for mechanized tillage, pesticides, and fertilizers; and overcomes soil fatigue, drought, flooding, salinity and aluminum toxicity.¹²³ Yet the Foundation has also acknowledged that such altruistic goals are fundamentally undermined by norms (i.e. profit motivation, secrecy, and protectionism) that have come to define the transnational biotechnology industry and the institutional and regulatory structures that have been created to support it.¹²⁴ Its adaptation to the constraints on SEI posed by international laws governing intellectual property has been to engage with firms and states to gain their support for organizations such as PIPRA, AATF, and AHBF that are focused on facilitating developing country scientists to access proprietary technology for the benefit of the world's poor.

Critical scholars may portray these initiatives as evidence of RF functioning as a stabilizer of the status quo. By not contesting the injustices propagated by the international intellectual property rights regime, it may seem logical to ask whether the foundation is not working to reinforce unjust rules of the world imposed upon poor states, which ultimately work against their interests. I argue however that this is not the case. In instances whereby IP held by firms has been instrumental in creating new plant varieties, RF-enabled PDPs employ

¹²³ Anonymous interviewee 19, November 29, 2010.

¹²⁴ Anonymous interview 3, December 6, 2010.

strategies such as free licensing and tiered pricing to circumvent the constraints of the existing IR regime. These arrangements are not structured to provide new opportunities for participating firms to profit from their IP portfolios. Rather, these legally binding agreements allow those innovating through science for a beneficiary population with limited purchasing power access to proprietary technology, without having to continually appeal to the charitable sentiment of the firm holding the needed IP. In this regard the Foundation's capacity for institutional innovation has created new opportunities in science-enabled innovation oriented towards developing new public goods for the world's poorest people without having to contest the larger system.

Chapter 6: BMGF's Influence over Global Health Governance

6.0 Introduction

This chapter provides an overview of the Bill and Melinda Gates Foundation's (BMGF's) efforts undertaken to date to improve the health of the world's poor. As outlined in chapter 4, throughout the twentieth-century, the Rockefeller Foundation (RF) maintained tremendous influence over how states responded to health challenges: how public health was conceptualized and taught, how clinical medicine was practiced, and how vaccines were produced and prevention and control programs operationalized. Despite being inspired by and in many ways modeled on the Rockefeller template, I argue that BMGF has not yet achieved the broad policy influence attained by RF. In part this is because its primary focus has been to date comparatively quite narrow, by and large limited to underwriting product development. At the same time, it is important to remember that despite being by far the world's largest philanthropic Foundation in existence today, BMGF is still very much a nascent entity.

“Guided by the belief that every life has equal value” the BMGF was created around the goal of *“helping all people lead healthy, productive lives [emphasis added]”*¹ While ambitious to say the least, this commitment is certainly being taken seriously by the Foundation's leadership, for in its short life, it has attained an endowment of US\$ 36 billion and granted over US\$ 18 billion through its Global Health and Development programs.² Moreover, BMGF has been willing—perhaps even more than RF—to work within the structural parameters established by the neoliberal order's most powerful actors—states and firms—in pursuit of its goals.

The chapter begins by surveying some of the first grants made by the Foundation's Global Health Program under the leadership of Gordon Perkin, the co-founder of the Seattle-based Program for Appropriate Technologies in Health (PATH). Grants such as that which underwrote the Meningitis Vaccine Project (MVP) embodied the Foundation's early

¹ BMGF, “Global Health: Strategy Overview” (September 2010) Accessed: Nov 2, 2010
<https://docs.gatesfoundation.org/Documents/global-health-strategy-overview.pdf>

² BMGF, “The Gates Foundation Fact Sheet,” Accessed February 14, 2013
<http://www.gatesFoundation.org/about/Pages/Foundation-fact-sheet.aspx>

commitment to facilitating the development of new technologies and particularly vaccines specifically geared to the needs of the world's poor, and foretold PATH's importance for BMGF as a vehicle to operationalize its ideas. Another key initiative of the Perkin years to be examined is the Global Alliance for Vaccines and Immunization (GAVI), which I argue represents a watershed in global health governance. GAVI's significance, I argue, lay in its success in bringing together as equals states, International Organizations (IOs), civil society groups and the pharmaceutical industry working towards the common goal of increasing access among the world's poor to the protection conferred by immunization.

The chapter then turns to examine changes in the inner workings of the Foundation itself, chronicling how the decision making structure informing the Global Health Program has evolved in its short fifteen year history. Drawing heavily on interviews with current and former senior staff members, the chapter provides unique insights into how and why what began as a small team of generalists relying heavily on external experts to guide their substantial grant making has morphed into to a large group and an increasing number of in-house issue-experts placing heavy emphasis on metrics.

Three recurring criticisms of BMGF's involvement in global health provide an opportunity to compare it to RF's one hundred year legacy in this domain. The first is that it has maintained a too narrowly defined niche in new technologies geared towards communicable disease control, which critics argue should be broadened to include general health systems strengthening and investing in human resources at the country level. The second recurring criticism relates to a perceived gap between the Foundation's stated ambitions and realities on the ground in the contexts where it seeks to catalyze change, which has been attributed in large part to its lack of operational programs. The third major criticism examined is that BMGF places too much emphasis on market-based solutions for what are seen by its critics as inherently political problems.

Key informants within the Foundation suggest that the future of the BMGF's global health program will see a continuing emphasis on enabling new technologies and working closely with the private sector to achieve this, but they will increasingly see the handoff of responsibility for delivering said health technologies to the intended beneficiaries shift to the

Foundation's Global Development program now left by former PATH Chief Executive Officer Chris Elias.

The chapter concludes with the suggestion that the degree to which BMGF widens the scope of its initiatives and is able to adapt to future shifts in the global distribution of power has yet to be determined. Consequently I suggest that the Foundation has not yet likely lived up to its full potential as an agent of change and the significance of its contributions to global governance and the implications of its agency can only be appraised based on the first twenty years of its existence.

6.1 The Perkin Years: Building on PATH Approach

The William H. Gates Foundation was created in 1994 by American billionaires Bill and Melinda Gates with US\$94 million in Microsoft shares, and renamed the Bill and Melinda Gates Foundation (BMGF) in 1999.³ From the beginning, health was the Foundation's primary focus and there are multiple reasons for this. The 1993 World Bank report, "Investing in Health," reportedly piqued Bill Gates' interest in public health,⁴ and Warren Buffett recommended that Gates consider working philanthropically in family planning. Gates Sr. assumed initial responsibility for the direction of the Foundation, and at the suggestion of RF staff, he began soliciting advice in 1995 from Gordon Perkin, co-founder and then President of PATH.⁵

When RF first turned its attention to health, individuals such as William Welch and Abraham Flexner provided the Foundation with ideational blueprints for how to reform medical and public health education, which RF subsequently embraced and expanded through grants. Gordon Perkin is one of several norm entrepreneurs representative of particular epistemic communities who have provided both the intellectual and normative blueprints informing BMGF's Global Health Program. RF successfully illuminated the utility of PATH model as

³ Susan Okie, "Global Health—The Gates-Buffett Effect," *New England Journal of Medicine*, 355, no. 11 (2006): 1085.

⁴ Jon Cohen, "Gates Foundation Rearranges Public Health Universe," *Science* 295, no. 5562 (2000): 2001-2002.

⁵ William Muraskin, *Crusade to Immunize the World's Children: The Origins of the Bill and Melinda Gates Children's Vaccine Program and the Birth of the Global Alliance for Vaccines and Immunizations* (Los Angeles: USC Marshall BioBusiness Initiative, 2005), 3-4; Anonymous interview 8, June 9, 2011.

an approach of collective action. However it was Gordon Perkin who, upon becoming the inaugural head of BMGF Global Health Program in 2000, effectively launched the global Product Development Partnership (PDP) era and ensured that it would become a defining aspect of the global health governance landscape.⁶

The MVP, which focused on the development of a low-cost vaccine for the prevention of meningococcal meningitis specifically for use in Sub-Saharan Africa, highlights the Foundation's early commitment to Science-Enabled Innovation (SEI) focused on the needs of the world's poorest people, the Public-Private Partnership (PPP) paradigm, as well as the critical role BMGF has come to play in PATH's ongoing work.⁷

MVP was initially granted to PATH in 1995 with a US\$ 300,000 grant by the William H. Gates Foundation, which was spread over three years. Compared to many if not most subsequent Foundation grants, it was relatively small.⁸ While PATH was tasked with overseeing the development of the vaccine, all of the pre-requisite science was already in existence. Most importantly, the conjugate technology that informed the eventual MenAfriVac vaccine had been developed at the National Institutes of Health (NIH) and was therefore not under patent. As a consequence, PATH was able to transfer this technology to the private for-profit Serum institute in India and involve the World Health Organization (WHO), making MVP a PPP from its inception. In 2001, when BMGF made a subsequent US\$ 70 million grant to PATH to develop the vaccine, the Serum Institute benefited from free access to the technology and advanced contracts for up to 50 million doses. WHO and UNICEF also benefited by being able to ensure that states in the Sahel region had access to a vaccine to confer long-term immunity against a disease that at the time claimed some twenty thousand lives per year.⁹

The rationale for BMGF's initial focus on developing new technology was that if evidence of efficacy could be demonstrated, governments would likely adopt it. While this influence is indirect, the process in practice is well illustrated by the Meningitis A vaccine in the context

⁶ Anonymous interviewee 9, November 29, 2011.

⁷ Anonymous interviewee 8, June 9, 2011.

⁸ Ibid.

⁹ Ibid.

of the Sahel states, perhaps most notably in Burkina Faso, the first intended beneficiary state to launch a nation-wide immunization campaign.¹⁰

RF spearheaded the creation of most of the early partnerships: from the overall visioning process, mapping of needs and creating the scientific blueprints and the business plans. BMGF, in contrast, did not yet exist or was just getting started when initiatives such as the International AIDS Vaccine Initiative (IAVI), TB Alliance, Medicines for Malaria Venture (MMV) and the Global Campaign for Microbicides Initiative were launched.¹¹ However, within five years of its establishment, BMGF had become the primary backer for most of the large global health PDPs RF initiated in the mid-1990s, allowing them to attain a new level of growth.¹² Between 1998 to 2007 BMGF's Global Health Program devoted one third of its material resources to supporting Global Health Partnerships (GHPs).¹³ While IAVI, for example, was established with a US\$10 million RF grant, BMGF's US\$ 100 million contribution enabled the organization to broaden its scope. According to director William Foege—former Director of the United States Center for Disease Control and Prevention (CDC) and a Senior Fellow within BMGF's Global Health Program,—Bill Gates always saw IAVI as a RF project. Nonetheless it was BMGF's contribution that catalyzed NIH to inquire about what it could do to improve its own HIV research program, which triggered a new series of investments in HIV/AIDS research.¹⁴

Scaling up pre-existing projects deemed compatible with the Gates family's vision of improving health is a common theme for BMGF, which for example provides more than sixty-five percent of funding for MMV.¹⁵ The same is true of the Global Polio eradication initiative, a program that began in 1988 and was led by WHO, UNICEF and Rotary

¹⁰ Ibid.; Djingarey, Mamoudou H., Rodrigue Barry, Mete Bonkougou, Sylvestre Tiendrebeogo, Rene Sebgo, Denis Kandolo, Clement Lingani et al. "Effectively introducing a new meningococcal A conjugate vaccine in Africa: the Burkina Faso experience." *Vaccine* 30 (2012): B40-B45.

¹¹ Anonymous interviewee 2, January 18, 2011.

¹² Anonymous interviewee 17, August 18, 2011.

¹³ David McCoy, Gayatri Kumbhavi, Jinesh Patel, and Akish Luintel, "The Bill & Melinda Gates Foundation's Grant-Making Programme for Global Health," *The Lancet* 373, no. 9675 (2009): 1649.

¹⁴ Interview with William Foege, August 18, 2011; Anonymous interviewee 2, January 18, 2011.

¹⁵ Medicines for Malaria Venture, "MMV Funding and Expenditure," accessed April 8, 2012 <http://www.mmv.org/invest-us/mmv-funding-and-expenditure>

International, which has raised US\$8.2 billion in pursuit of eradicating polio globally, to which BMGF has contributed an astounding US\$700 million.¹⁶

In contrast, RF had become a relatively minor health donor by the 1990s, and as BMGF increased its investments, RF staff began questioning what the organization was bringing to the table. From the perspective of one former RF official, BMGF wanted RF to continue in global health for two important reasons. The first reason was its established network and diplomatic power. A diverse array of organizations responded to RF's request to come together on certain ideas and for that reason Gates wanted RF to play a stronger convener role in their initiatives. The second reason was an understanding that RF possesses a unique historical memory of what has worked and what has not for almost a century. This is significant because in recent years, there has been a push within RF itself that its history should not restrict its present and future focus, which explains why the foundation is far less focused on health at the present than it has been in the past.¹⁷ Since BMGF's establishment, there has been ongoing high-level communications between the two Foundations, with individuals such as William Foege, who previously served as Chairman of the Task Force for Child Survival (TFCS), serving as a link between the two.¹⁸

6.11 The Global Alliance for Vaccines and Immunization and the Allure of Vaccines

PDPs have been an effective strategy for engaging historically reluctant firms to innovate for the benefit of historically marginalised people, by providing such firms with both material and reputational incentives for investment. However their restricted focus on individual diseases means they are not appropriate vehicles for bringing about systematic reforms to how any issue is governed globally. Yet in the same way RF and BMGF illuminated and innovated around public and private sector gaps via PDPs, they have also been the primary drivers of a variety of Informal Global Alliances (IGAs) intended to bring greater coherence

¹⁶ Polio Eradication, "Global Polio Eradication Initiative Donor Profile for 1988-2012," accessed November 25, 2012. <http://www.polioeradication.org/poliodonors.asp>; Robert Guth, "Gates Rethinks His War on Polio," *The Wall Street Journal* (April 23, 2010), accessed June 24, 2010, <http://online.wsj.com/article/SB10001424052702303348504575184093239615022.html?mod=e2tw>

¹⁷ Anonymous interviewee 1, November 19, 2011.

¹⁸ Anonymous interviewee 2, January 18, 2011.

to how complex challenges necessitating collective action are approached, beginning with the failed Children's Vaccine Initiative (CVI) but attaining success with GAVI Alliance and later with the Global Alliance for Improved Nutrition (GAIN) and the Alliance for a Green Revolution in Africa (AGRA).

While the latter three initiatives are independent entities in their own right, their intended purpose has been to catalyze the formation of informal coalitions of actors committed to common goals and to coordinate roles and responsibilities to ensure those goals are attained. All initiatives serve to illustrate the Foundation's private diplomacy, for in each instance they have played the role of facilitator for establishing new governance arrangements focused on the provision of public goods crafted to include the participation of private actors. For in addition to states and public international organisations, these entities have sought to include private and Civil Society Organisations (CSOs) whose participation is deemed just as essential as that of public sector entities if the initiative is to be succeed in the long term. Underlying the push for these IGAs is the assumption that no single actor or actor category (i.e. states, IOs, NGOs, etc.) is sufficiently capable of addressing collective action problems on its own. Moreover, these informal frameworks of collective action are also clear examples of governance adapted to a neoliberal era in which the United States has driven a shift from privileging formal organizations such as WHO to privileging informal self-selective organizations. Through the example of GAVI, I shed light on the role played by BMGF in the creation of this still emerging form of global governance, which I argue has become a defining character of the post-Westphalian landscape.

Despite the many excellent global initiatives undertaken by various public and private organizations over the course of the twentieth century to strengthen health in developing countries, there was a collective sentiment within BMGF that there remained areas of opportunities to make important contributions and vaccines were one such area.¹⁹ A small group of PATH and WHO-associated scientists committed to saving lives through vaccination all convinced Bill Gates that investing in vaccines would fill an important gap, as they believed the topic had been neglected since the failure of RF-driven CVI.²⁰ Seen in this

¹⁹ Anonymous interviewee 8, June 9, 2011.

²⁰ Anonymous interviewee 9, July 12, 2011.

light, the argument that people make history is quite compelling. Gates apparently read voluminously and consulted widely. *Investing in Health*²¹ emphasized this same point, and his life experience in software development is seen to have played a role as well, for vaccines are very similar to software in that the majority of costs in rolling out new products lie in the research and development stages. Allegedly, he felt that if the Foundation could accelerate the research and development, the rest would take care of itself.²²

With CVI's fractious history in mind, BMGF established the Children's Vaccine Program (CVP) in 1998 as a semi-autonomous entity housed within PATH's offices in Seattle. Its purpose was to catalyze research supporting the development of new vaccines for neglected diseases, provide a dedicated source of funding for vaccine purchase and delivery, and heighten government's awareness for immunization as a public good. GAVI grew out of this initiative with an initial US\$750 million grant made by BMGF through the CVP, which was later doubled to US\$1.5 billion.²³ Gordon Perkin had indicated that BMGF was actively seeking any organization that could provide a vehicle for introducing new vaccines at low costs, and it was on this basis that the grant was made.²⁴ While IOs, including WHO and UNICEF, were intended to benefit from this money, the autonomy of the CVP ensured that UN agencies could not hijack or shut down GAVI out of concerns for encroachment upon their individual mandates.²⁵ Through GAVI, BMGF ensured that the idea of overhauling the global system of immunization was reinstated, and in a time of increasing fiscal austerity, those with the authority to undermine the legitimacy of the initiative chose instead to embrace it.²⁶ Via GAVI, Bill Gates effectively shamed WHO and UNICEF into cooperating for the public good. In the words of Dr. Jim Kim, current President of the World Bank and Co-Founder of a CSO committed to global health equity, Partners in Health: "*By doing so much so fast, the Gates Foundation embarrassed those who were supposed to be doing such things* [emphasis added]."²⁷

²¹ The World Bank. *Investing in Health*. New York: World Bank and Oxford University Press. 1993.

²² Ibid.

²³ Muraskin, *Crusade to Immunize*.

²⁴ Anonymous interviewee 9, July 12, 2011.

²⁵ Muraskin, *Crusade to Immunize*.

²⁶ Anonymous interviewee 17, August 18, 2011.

²⁷ Tom Paulson, "Gates Foundation Out to Break the Cycle of Disease," *Seattle Post Intelligencer* (December 8, 2003), accessed August 2, 2010 http://www.seattlepi.com/globalhealth/151538_global08.html

According to one former senior staff member in the Global Health program, the first three years of the Foundation's existence was characterized by a paucity of employees with obvious vested interests, meaning that BMGF was very open to a diversity of ideas. The big-picture thinking of William Foege was very different from that of Gordon Perkin, whose experiences at PATH made him very much focused on the local level. Foege's ability to read patterns and synthesize a diversity of views according to this individual, underlies the success of GAVI, which was very much a result of that type of thinking. Consequently, GAVI worked as a BMGF-driven initiative because it married Bill Gates' predilection for technological innovation with Foege's diplomatic ability to soothe longstanding tensions, such as those between UNICEF and WHO, which previously impeded overhauling the means by which vaccines were developed and distributed, and increasing the overall number of new vaccines coming online. A new kind of diplomacy was required to engage with all members of the global health community and in this regard GAVI was deemed to have worked brilliantly.²⁸

While GAVI is very much a BMGF initiative, it is important to note that RF's convenor-status was employed in its creation, in that it was at Bellagio in March of 1999 where the alliance was forged.²⁹ Moreover in August of 2011, former RF staff member and founding head of IAVI Seth Berkley was appointed Chief Executive Officer (CEO) of GAVI, illustrating once again the epistemic ties between the two foundations.

In terms of substance, there was very little that distinguished GAVI from its failed predecessor. What was new was a consensus to do away with CVI and create a new organization; however it was not immediately clear what that new organization would look like or how it would achieve its goals. One former advisor to BMGF in relation to GAVI speculates that it is quite possible that the decision to fund GAVI was made more out of frustration with the lack of progress of CVI and trust in the people proposing GAVI than a definition of a clear and workable path forward.³⁰ In other words, of paramount importance was the need to remove CVI from the control of WHO and that is what GAVI achieved.

²⁸ Anonymous interviewee 25, August 16, 2011.

²⁹ Muraskin, *Crusade to Immunize*.

³⁰ Anonymous interviewee 9, July 12, 2011.

There is, however, little evidence to suggest GAVI represented any new intellectual insight about how to proceed programmatically. To illustrate this last point, a number of task forces were founded to develop aspects of GAVI program, which attempted to reinvent many wheels. Some of this work was deemed inevitable given that GAVI was a new global organization several orders of magnitude larger than anything previously attempted. Yet considerable time and money was spent developing specific ideas that were later abandoned because they were deemed by one former external advisor as fundamentally flawed from the onset. One example was the decision to create a separate Information, Policy and Advocacy Task Force to develop a tool-kit of information intended to convince countries to support introducing new vaccines, despite the fact that it was well established that individual countries typically want information customized to their populations and unique cultural context. After a few years of effort, the Task Force was abandoned.³¹

A second example was GAVI's initial desire for simple metrics with which to make decisions for determining the level of assistance to provide to beneficiary countries. Initially it was proposed by members of another task force struck to study this question; that there should not be any fixed cut-off level per country given that needs vary significantly with relative wealth and that economic status changes over time, and that the amount of support should be in proportion to Gross National Product (GNP) per capita. This advice was ultimately rejected because GAVI's leadership wanted a simple metric with which to determine eligibility: that being a Gross Domestic Product (GDP) of no more than \$1000 per capita. While this metric was easy for donors to understand, meaning that GAVI would be "helping the poorest," it was subsequently abandoned and a policy similar to the position originally advised by the Task Force was adopted when it became apparent that such an artificial cut-off was excluding many states and populations within states that should benefit from GAVI funding.³²

As an approach to collective action, the durability of the informal global alliance embodied by GAVI and catalyzed by a private non-state actor has been questioned. William Muraskin has argued for example that GAVI—while seemingly a powerful entity—is still very fragile in

³¹ Ibid.

³² Ibid.

that it was conceptualized and driven by people operating outside of the traditional state and IO-centric global health system, in large part out of a perception that the system was not working. At the same time, in order to succeed, GAVI requires the ongoing buy-in of the system's traditional membership, meaning there are no guarantees that the alliance will hold itself together in the event of conflicts or changing interests.³³ For example, the willingness displayed by former WHO Secretary General Gro Harlem Bruntland to engage with the foundation and other non-state actors in pursuit of common goals set her apart from predecessors such as Hiroshi Nakajima, who did not buy into the importance of making the changes to the system TFCS pushed for when CVI was being negotiated.³⁴

Yet the view from within BMGF is that GAVI is as fragile as any robust democracy (i.e. even though there have been few great democracies, democracy nonetheless appears to be the best approach to government that has been devised to date).³⁵ While it is possible that presented with a seemingly intractable conflict of personalities, and that this novel form of global health governance might collapse, GAVI remains a functioning alliance, and the more it effectively fulfills its intended function—that being successfully immunizing the world's children—the harder it will be to discredit or disband it. A case in point is that prior to the establishment of GAVI, UNICEF Executive Director Carol Bellamy actually approved a large cut to UNICEF's vaccination program, which was considered a radical shift from the thinking of her immediate predecessor James P. Grant. GAVI's formation established a norm that such cuts were unacceptable given UNICEF's mandate, and Bellamy was forced to retract them.³⁶ This in turn reinforces that in addition to illuminating and filling public-private gaps, RF and BMGF's proven potential lies in creating the preconditions for both normative and organizational shifts in the governance of global health. While RF has a more established legacy of operating at the interface of social philanthropy, it no longer has the required capital to act autonomously in this regard.³⁷ BMGF, however, retains this capability and given Bill Gates and Warren Buffett's efforts to stimulate interest in philanthropy as a

³³ Muraskin, *The Politics of International Health*, 158-206.

³⁴ Anonymous interviewee 14, December 9, 2010; Bruntland, Gro Harlem. "Secretary General speech", 51st World Health Assembly, May 13, 1998; Anonymous interviewee 17, August 18, 2011.

³⁵ Anonymous interviewee Ibid.

³⁶ Ibid.

³⁷ Anonymous interviewee 25, August 16, 2011.

vocation of the world's über-rich, there is no reason to suggest that others will not follow in its wake.

GAVI in turn has been credited with serving as the model for a series of new bilateral initiatives (e.g. the Presidents Emergency Plan for AIDS Relief (PEPFAR)) rolled out by Northern states, which had become complacent to the health needs of the world's poor,³⁸ as well as other PPPs looking beyond product development, such the Global Fund which was created in 2002 specifically to galvanize financial and political support for combating HIV/AIDS, malaria and TB.³⁹ Since its establishment, the Global Fund has become the single largest source of financing for malaria and TB research and control, and a major source of funding for work on HIV/AIDS.⁴⁰ BMGF alone has contributed over US\$ 1.4 billion to its coffers. It is widely seen as a model alternative financing mechanism, praised not only for its capacity to raise funds for what were historically neglected diseases, but also for its transparency and inclusiveness, and consequently many states now choose to channel the majority of their health-specific Overseas Development Aid (ODA) through it. Like GAVI, the Global Fund has proven to be a functional interim mechanism, in that it is helping get vaccines and drugs to people in need of them and could theoretically be used to disseminate other needed public goods. It was not, however, intended to be a long-term solution to what is inherently a systemic market-based problem in that it cannot be expected to ensure that the necessary human-resource balances, policies and infrastructure are in place at the country level to ensure public health systems run effectively.⁴¹

GAVI made clear that barring a dramatic change in public sector capacity, the private sector, which is responsible for over half of all global health related research,⁴² is needed to be included for the arrangement to fulfill its intended function. Consequently, while designed as informal global alliance, GAVI nonetheless provided credence to the viability of a broader

³⁸ Okie, "Global Health," 1085.

³⁹ Amir Attaran and Jeffrey D. Sachs, "Defining and Refining International Donor Support for Combating the AIDS Pandemic," *The Lancet* 357 (2001): 57-61.

⁴⁰ The Lancet, "Five Reasons to Fund the Global Fund," *Lancet* 378 (2011): 1198.

⁴¹ Anonymous interviewee 14, December 9, 2010.

⁴² Global Forum for Health Research (GFHR), *Monitoring Financial Flows for Health Research* (Prioritizing Research for Health Equity, 2008), accessed August 15, 2012., http://www.globalforumhealth.org/Site/002_What%20we%20do/005_Publications/004_Resource%20flows.php

model of institutionalized global governance aimed at increasing public-private cooperation, envisioned by the likes of John Ruggie and Jeffrey Sachs. As Assistant Secretary General for Strategic Planning at UN from 1997 to 2001, Ruggie oversaw the creation and institutionalization of the Global Compact and the Millennium Development Goals (MDGS), which were both engineered around the PPP paradigm, and intended to bring renewed focus and resources to longstanding UN goals related to social and environmental stewardship and poverty reduction.⁴³

6.2 From General Contractor to Specialist Agency: Decision-making within BMGF

When Perkin officially joined BMGF in 2000, the Foundation had a total of eight staff to grant an estimated US\$ 600 million per year, which led the team to adopt a general contractor model. Despite having clear end-goals, their limited numbers meant that they could not be responsible for the details of how these goals were met, leading to work being contracted out. That was in essence the granting philosophy of BMGF's Global Health Program for its first five years. Once problems (e.g. the lack of a viable malaria vaccine) were identified, a white paper on the current state of the science was commissioned to get a sense of what was ready to go to scale. Trusted entities were then sought to manage the projects and assume responsibility for ensuring results which negated the need for the program to have expertise in the subject areas of the grants being made.⁴⁴

Once trusted partners were identified, the grants process was kept rather simple, in that grantees had to submit short letters of proposals—which if successful—typically led to a single large grant made to that entity and their responsibility for the overall management of the project. These partners would then pass on much of this funding to other organizations (i.e. producers and NGOs marketing it to the intended target audience). For example, an estimated seventy percent of funds granted to PATH would go elsewhere.⁴⁵

⁴³ Richard Smith, "Global Health Governance and Global Public Goods," in *Making Sense of Global Health Governance: A Policy Perspective*, eds., Kent Buse, Wolfgang Heine, and Nick Drager (New York: Palgrave MacMillan, 2009), 202.

⁴⁴ Anonymous interviewee 8, June 9, 2011.

⁴⁵ Ibid.

The first 180 grants were in fact approved by Bill and Melinda Gates personally. Perkin's team provided abstracts and recommendations, which the couple often questioned or served as the basis for additional requests for information. This was effectively the review process as there were no technical advisors. Instead, decisions regarding grants were made collectively and in bulk by the staff, Bill, Melinda, founding CEO Patty Stonesifer and Bill Sr. Under this system, large grants were made in very short order, for example, a US\$ 100 million grant for MMV, which was made in 48 hours after first being reviewed.⁴⁶

When Richard Klausner left the directorship of the National Cancer Institute in 2003 to replace Perkin as head of the Global Health program, he brought with him from NIH a far more rigorous and academically-oriented review process that is now used within the Foundation to review, score and prioritize grant applications.⁴⁷ Bill Gates is himself admittedly obsessive about metrics, such as reducing the mortality rates of children under five, which explains in part the Foundation's focus to date on individual diseases such as pneumonia and malaria.⁴⁸ The Foundation's core goal *helping all people lead healthy, productive lives* is in fact reflective of this emphasis on measurement. William Foege notes detractors of the Foundation have argued that health equity can never be achieved in practice, which greatly diminishes the utility of such goal for any organization. Yet BMGF's leadership is of the view that since it is quite easy to measure if it is not present, it is a perfectly logical goal to aspire to.⁴⁹

Klausner's arrival marked an important shift away from continuing to bet on the competencies of grantees towards employing issue-experts, which the new head strongly advocated and the Gates accepted.⁵⁰ The decision to hire in-house experts was driven by a desire to have more effective means of monitoring how the foundation's assets were being spent because of the focus on product development and the biological complexity of the diseases of interest. Initially for example funding to support research on Community-Based TB therapy was made available to Partners In Health to support their work in this area in

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ Bill Gates, "Mosquitoes, Malaria and Education," (TED talk, Date of talk), accessed: March 9, 2010., <http://www.youtube.com/watch?v=tsgvhp07BC8&feature=dir>

⁴⁹ Interview with William Foege, August 18, 2011.

⁵⁰ Anonymous interviewee 25, August 16, 2011.

Haiti, Peru and Russia. After some time, however, the Foundation recruited world renowned TB expert Peter Small from Stanford to provide a better sense of the status of prospective research pathways related to developing new diagnostics, drugs and most importantly a vaccine to replace the existing but antiquated Bacillus Calmette–Guérin (BCG) vaccine. An infectious disease physician with a very broad understanding of the ecology and epidemiology of TB, Small helped the Foundation narrow its focus to six vaccines candidates currently under development through the Aeras TB partnership. At the same time, his formal affiliation with the Foundation heightened his own convening power, meaning his ability to bring people together in pursuit of a common goal.⁵¹

One of the most notable Foundation initiatives originating from this period is the Grand Challenges in Global Health (GCGH) program, which epitomized BMGF's continuing commitment to SEI. As an approach to addressing complex problems, the grand challenges scheme was first conceptualized over a century ago by mathematician David Hilbert, when in 1900 he laid out twenty-three unsolved mathematical problems for the international mathematical world to solve.⁵² Revitalized by BMGF in 2003, GCGH was created as a funding scheme aimed at generating interest in solving fourteen specific challenges related to improving vaccines, vector-borne disease control, biofortification, and developing new pharmaceuticals for communicable and chronic diseases as well new health-related assessment tools.⁵³ Since its inception BMGF has contributed a total of over US\$ 450 million for the program, which is administered by The Foundation At The National Institutes of Health (FNIH), a semi-autonomous entity within NIH established by the United States congress in 1996 to promote collaboration between private, public and third sector organizations. The Grand Challenges program is anomalous in that through international polling, it allows scientists to choose both the broad goals and individual challenges, which have ended up being research that is high-risk although potentially highly-impacting in

⁵¹ Anonymous interviewee 17, August 18, 2011.

⁵² David Hilbert, "Mathematical Problems: Lecture Delivered Before the International Congress of Mathematicians at Paris in 1900," *Bulletin of the American Mathematics Society* 8 (1902): 437-479; Anonymous interviewee (PS), December 13, 2010.

⁵³ Gates, W. "Humane Research: the West's Best Scientists Should Turn Their Attention to the Developing World's Diseases," *The Wall Street Journal* (January 26, 2003)

nature.⁵⁴ Nevertheless it is a twenty-person board with considerable developing country representation, which ultimately selects the grants.⁵⁵

That GCGH has had a catalytic effect on NIH research priorities is quite evident. Kristin Mathews and Vivian Ho have noted that from 2003 to 2008, NIH supplemented GCGH with US\$ 1 billion in global health funding, even though its overall budget remained unchanged. During this period NIH funding for malaria research increased twenty-six percent, general research on vaccines by forty-one percent; and vaccines specific to malaria and TB by ninety-six and sixty-two percent respectively, while research on heart diseases—the leading cause of death in US—increased by only three percent, and research on asthma was reduced by fifteen percent. The authors suggest that GCGH must be viewed as a platform from which BMGF has effectively hijacked a public sector organization to advance its own skewed agenda with minimal accountability.⁵⁶ Proponents of the Foundation and GCGH certainly take issue with this argument, instead suggesting that while BMGF has been a catalyst, GCGH—like GAVI—has been instrumental in galvanizing support for attention on neglected issues by those with available resources and should therefore be lauded.⁵⁷

Moreover, while BMGF has largely focused on discovery related to infectious diseases, the approach has been conceptualized in different ways and for different ends. The Global Alliance for Chronic Disease for example has embraced the general grand challenges concept, but focuses on the process of implementation research, while the United States Agency for International Development (USAID)—which has also identified priorities employing the approach—is focused on service delivery. From The National Academy of Engineering, to fragile states, GCGH has proven itself to be a flexible approach and is not at all limited to discovery science, as utilized by BMGF.⁵⁸

Coming from NIH, Klausner was viewed internally as a natural empire builder who sought to shore up BMGF's capacity to make informed decisions. Yet by increasing the number of

⁵⁴ Kirstin R.W. Mathews and Vivian Ho, "The Grand Impact of the Gates Foundation," *European Molecular Biology Organization (EMBO Reports)* 9, no. 5 (2008): 409-410.

⁵⁵ Anonymous interviewee 26, December 13, 2010.

⁵⁶ Mathews and Vo, 410.

⁵⁷ Anonymous interviewee 26, December 13, 2010.

⁵⁸ Anonymous interviewee Ibid.

specialists within the Foundation, there has been an inevitable overall reduction in the level of engagement with external experts, ironically undermining the original goal of convening the world's best thinkers to work on problems of interest to Bill and Melinda. As a consequence, donors became less likely to be informed of the both opportunities and barriers that exist for any given problem, and transparency of process was reduced.⁵⁹

A focus on metrics continued to inform the processes through which the foundation's Global Health program identified funding priorities, made grant decisions and reviewed internal policies under the leadership of Tadataka "Tachi" Yamada, a gastroenterologist by training who came to the Foundation in 2006 from pharmaceutical giant GlaxoSmithKline (GSK) where he was Chairman of Research and Development. At this time and continuing today, determinants of disability-adjusted life years (DALYs) informed the focus on particular communicable diseases including but not limited to HIV/AIDS, malaria and TB, neglected diseases (i.e. respiratory and diarrheal), and in a more integrated way—maternal and child health. Associated with the latter have been initiatives related to family planning and nutrition. Within these priorities the program spent amounts that were very roughly correlated to the DALY burden.⁶⁰

Yamada's tenure saw a narrowing of focus on three equally critical points in the process of SEI: (i) discovery (e.g. of new vaccine candidates); (ii) development (e.g. shepherding vaccines through clinical trials and the regulatory process and getting them manufactured); and (iii) delivery (e.g. ensuring a system is in place so that the same vaccines get to those who need them). BMGF's efforts increasingly related to examining how these three junctures could be better integrated to improve the overall efficiency of process.

Much emphasis in this period was placed on developing long-term strategies for the key diseases on which the Foundation worked. This became more and more important as the scope of its activities broadened and the danger of losing a coherent focus increased. This emphasis on integration has been paralleled by an increasing focus on how to measure the impact of the Foundation's investments; for as the program grew, more of its finite capital

⁵⁹ Anonymous interviewee 25, August 16, 2011.

⁶⁰ Anonymous interviewee 27, January 4, 2012.

was being spent, thereby increasing the potential for future constraints. Moreover as programs matured, grantees began to apply for additional funding. Accordingly it was felt by the Global Health program's leadership that there was a need for new processes for measuring what investments were paying off, given the program's short and long-term goals, and which were not.⁶¹

The Foundation initially started out with a broad approach: wherever there were solutions available to the problems that the Foundation was intent on addressing, it would apply them where it could, the Global Fund and GAVI being such examples. Moreover where there were no solutions, the Foundation was committed to invest in developing them. However while the discovery side of product development is relatively inexpensive, the development side can be very expensive. As the Global Health Program grew and the investment in the discovery side began to pay off (i.e. via programs such as GCGH), resources began to shift towards subsidizing development costs.⁶²

The shift from a core group of savvy generalists to the acquisition of subject-specialists for each of the major disease entities that the Foundation was focusing on has not been without criticism, for it has fundamentally changed the dynamics of the organization. The move away from contracting out work has resulted in smaller grants, which may mean more control over where money is spent. However such a shift also requires many more staff and the responsibility of program officers to assess the validity of the science has been greatly heightened. This is because with the increase in the number of layers of bureaucracy, wrong decisions from the perspective of the final decision makers are far more wasteful in terms of resources (time and energy expended) than they once were. This presents a challenge for the Foundation as a whole because from the perspective of the program officer dealing with very complex subjects, it is far easier to say no to grants than to approve them. Despite the program's staff increasing by more than a factor of twenty, the amount of money granted per annum has seen only a threefold increase from US\$ 600 million in 2000 to just shy of US\$ 2 billion in 2010/11.⁶³ This increase reflects both a steady rise in the level of personal

⁶¹ Anonymous interviewee 27, January 4, 2012.

⁶² Ibid.

⁶³ Anonymous interviewee 8, June 9, 2011.

funds committed by Bill and Melinda, as well as an influx of new funds from Warren Buffett.⁶⁴

In pursuit of accruing in-house technical expertise, the same corporate strategy that made Microsoft the world's dominant software company—buying up talent in a bid to dominate the market—was increasingly being applied to the Foundation. This should be not surprising given that much of the leadership (Bill and Melinda Gates, Patty Stonesifer and Jeff Raikes who succeeded Stonesifer as CEO) originated there.⁶⁵ Mirroring the early years of RF, control over BMGF has from its establishment been concentrated in the hands of a small group of people with close personal ties to its creators. The Foundation has in fact a mere three trustees; Bill and Melinda Gates and Warren Buffett. At the same time, their “hands-on”, business-like approach to philanthropy is very different from the traditional RF style, which was characterized by growing communities through grant-making based on trust and limited interference.⁶⁶ If models of decision-making typically reflect the leadership preferences of any given organization, then BMGF is no different in this regard. While decision-making processes within the Foundation have changed over time according to changes in leadership, according to one well-placed observer within the Foundation, they currently reflect Bill and Melinda's increasing overall involvement in management.⁶⁷

A general approach comprised of four general mechanisms now informs decision-making across all three Foundation programs (Health, United States and Development).

First, each of the major initiatives (e.g. HIV, TB, agriculture, water and sanitation) has its own general strategy, which takes into consideration (i) the state-of-play in wider field; (ii) the major actors involved; and (iii) opportunity-mapping, as the intent is to not duplicate unless there is a fairly clear argument to be made as to why the Foundation can do something better. Each individual strategy takes approximately one year to develop and is

⁶⁴ Anonymous interviewee 27, January 4 2012; in 2006 Buffett effectively doubled the Foundation's endowments with a gift of ten million shares of his company Berkshire Hathaway, then valued at US\$ 30 billion. The 2008 financial crisis however greatly reduced the assets of BMGF Trust; then a separate entity formed in 2006 to manage the Foundation's endowed assets.

⁶⁵ Anonymous interviewee 25, August 16, 2011.

⁶⁶ Ibid.

⁶⁷ Anonymous interviewee 28, July 6, 2011.

informed by the expertise of both internal and external consultants, which also relates to accountability. These conclusions are then used as a guide toward grant making and the senior leadership then signs off on the general strategy.

Second, when the general strategy is in place, the program president and directors will work with their teams on the implementation of the sub-initiatives, which is when individual program officers start to look for prospective partners and oversee implementation. While the review of individual grants is an ongoing responsibility for program officers, at the senior level there is an annual review of grants as well to assess how each is working towards fulfilling the broader program goals.

Third, roughly every four years there is what is referred to within the Foundation as a “refresh” at the program level, which essentially means examining how has the internal/external environment has changed (e.g. the issues, the science, the players etc.), and how as an organization it needs to change accordingly. The refresh is illustrative of the fact that staff cannot operate outside of an approved strategy. Within the refresh process, efforts are made to identify a wide variety of stakeholders and issue-experts and solicit feedback (typically anonymous) from them. The Foundation has increasingly looked for new vehicles by which to obtain objective external advice; all grants for example need this input before decisions can be made, meaning each individual grant can be seen as a proxy-measure through which external checks on grant-making is obtained.

Finally, all three programs have external advisory boards which convene once a year to ensure that BMGF foci are representative of actual needs and compliment the work being done by other actors. Members of these boards are typically individuals with significant leadership experience at the international/global level (e.g. former Mexican President, Ernesto Zedillo).

All four of these measures are reflective of the Foundation’s increased efforts to be transparent and accountable. Traditional governance mechanism (i.e. states and IOs) have - compared to foundations - far more formal accountability mechanisms built into them, which they should, although these do not always function as intended nor are they always

acted upon. In the private sector, there are clear market tests as to what firms should or should not be doing but this is not the case in philanthropy. From the perspective of Foundation leaders, all BMGF can do is aspire to get the appropriate measures and actively look for ways by which to attain them.⁶⁸

6.3 Prominent criticisms of BMGF's influence in Global Health Governance

6.31 A Too Narrowly Defined Niche

Because BMGF is seen as having agenda setting power, their heavy emphasis on subsidizing product development and particularly novel high-risk technologies has raised the ire of those who believe the Foundation's assets would be far better spent on supporting more general health systems development and looking beyond communicable disease control to other challenges such as chronic disease prevention given the increasing DALY toll attributed to diseases such as diabetes and tobacco-associated cancers.⁶⁹

Critics of BMGF have made the point that historically medical technology has only been one factor among many underpinning decreases in mortality at the population level,⁷⁰ hence it is better to fund what has proven to be effective at a low cost (e.g. health education, improved diet, housing etc.).⁷¹ An example of such evidence is the study conducted by Jef Leroy, Jean-Pierre Habicht, Gretal Pelto and Stefano Bertozzi, published in 2007 in the *American Journal Public Health*,⁷² which concluded that existing proven technology can have three times the effect of investing in unproven technology. To arrive at this conclusion, the authors did an analysis of the top 120 organizations that are providing support for research

⁶⁸ Anonymous interviewee 28, July 6, 2011—personal perspective.

⁶⁹ Gill Walt, Neil Spicer, and Kent Buse, "Mapping the Global Health Architecture," in *Making Sense of Global Health Governance: A Policy Perspective*, eds., Kent Buse, Wolfgang Hein and Nick Drager (Basingstoke: Palgrave Macmillan, 2009); Kent Buse, *Global Health Partnerships: Mapping a Shifting Terrain* (London: DFID Resource Center, 2004).

⁷⁰ Anne-Emanuelle Birn, "Gates's Grandest Challenge: Transcending Technology as Public Health Ideology," *The Lancet* 366, no. 9484 (2005): 514–519; J.C. Riley, *Rising Life Expectancy: a Global History* (New York: Cambridge University Press, 2001).

⁷¹ Robert E. Black, Maharaj K. Bhan, Mickey Chopra, Igor Rudan, and Cesar G. Victoria, "Accelerating the Health Impact of the Gates Foundation," *The Lancet* 373 (May 9 2009), 1584-1585.

⁷² Jef. L. Leroy, Jean-Pierre Habicht, Gretal Pelto and Stefano M. Bertozzi, "Current Priorities in Health Research Funding and Lack of Impact on the Number of Child Deaths Per Year," *American Journal of Public Health* 97, no. 2 (2007): 219–23.

globally and found that ninety to ninety-five percent of funding has a high-tech focus (a basic biomedical approach to public health related to R&D for drugs, vaccines, diagnostics etc.). They then calculated the impact of this research on under-5 mortality, with findings that the current investment could reduce under-5 mortality by twenty-two percent. Finally, they calculated the impact on the same age group if the funding was instead put into strengthening existing technology. It was determined that this would lead to a sixty-six percent decrease in total mortality,⁷³ meaning that two thirds of all global childhood death are thought to be preventable if all of what was known to work were implemented.⁷⁴

The late medical entomologist Chris Curtis once suggested that public health is the art of making the best use of available resources, including knowledge, human capacity and finances. All of these resources are always limited, the evidence-base for the effectiveness and cost-effectiveness of many current interventions may be lacking, and policy makers have to make decisions based on the best evidence available.⁷⁵

The rationale for Bill Gates' activities in global health, which extends into the Foundation's development work, is to bring funding for GCGH-type problems that remain unsolved in the developed world. They have defined their niche narrowly and are unapologetic for it.⁷⁶ There is advantage in having a narrow focus, in that they are less likely to duplicate what other programs are doing. Yet critics would argue that more often than not the high-risk ventures they are supporting will fail, while other proven options will have been bypassed and these huge opportunity costs create a contradiction for an organization whose purpose is to save lives.⁷⁷ Moreover clinical or social policy intervention may be better options than developing a new compound. Yet as an organization, BMGF has been built itself around the PPP template. Gates has shown himself to be a technophile and drugs and vaccines are a natural fit for the paradigm and for BMGF, which explains their preference for recruiting staff from NIH, and the world of R&D, as this kind of expertise complements this

⁷³ Anonymous interviewee 12, November 24, 2010.

⁷⁴ G. Jones, RW Steketee, RE Black, ZA Bhutta, and SS Morris, "How Many Child Deaths Can We Prevent This Year?" *Lancet* 362 (2003): 65-71.

⁷⁵ Chris Curtis, "Critical Appraisal of Different Control Options—Some Controversial Examples from Vector Borne Diseases," (Curtis, Chris. "Critical Appraisal of Different Control Options—Some Controversial Examples from Vector Borne Diseases." Lecture 3 Course. Name Unknown. LSHTM London.

⁷⁶ Anonymous interviewee 1, November 19, 2010.

⁷⁷ Anonymous interviewee 11, January 20, 2011.

paradigm. Their embrace of the PPP paradigm must be seen in the context of larger global changes, where PDPs have been a band-aid for challenges borne out of a larger governance space, which is why they have been embraced so vigorously in the past fifteen years.⁷⁸

Nevertheless the Foundation will likely be forced into the health systems debate as time moves on, for example in order to sustain getting drugs to people who need them over the long term.⁷⁹ This is because communicable disease control programs cannot be sustained in the absence of an institutional entity that provides the skill-sets for all of the necessary services (i.e. epidemiology, research, laboratory, training, and surveillance). The Foundation can achieve its goals for a brief time via vertical programs, but in order for progress to be sustained, its goals need to be attached to a horizontal (systems) approach.⁸⁰

Historically, RF's country-level initiatives emphasized such capacity building and RF has recently re-positioned itself to focus on the reform of health systems. BMGF in contrast remains largely focused on product development and delivery.⁸¹ Its many defenders make the argument that while science-enabled biomedical innovation will never be the be-all and end-all of public health, historically, as acknowledged by vocal critics of the foundation, it was and continues to be one of several key sources of reducing morbidity and mortality in any setting. Moreover while effective communicable disease control efforts do depend on country engagement, by investing in particular diseases such as polio, BMGF is indirectly investing in health systems, as their monies go to developing the cold-chain infrastructure, purchasing the actual vaccines, and training staff in their delivery. Seen in this light, BMGF is bringing needed resources to the table and should be applauded for doing so.⁸²

What has made GAVI such an anomaly as a global health framework is that it is implicitly systems-oriented; while it certainly utilises “push” mechanisms to stimulate technological innovation, it also rewards countries for delivering vaccines—“pulling” them in the right direction from a policy perspective.⁸³ Moreover because GAVI has rules on what countries

⁷⁸ Anonymous interviewee 2, January 18, 2011.

⁷⁹ Anonymous interviewee 1, November 19, 2010.

⁸⁰ Anonymous interviewee 13, March 1, 2011.

⁸¹ Anonymous interviewee 2, January 18, 2010.

⁸² Anonymous interviewee 14 December 9, 2010.

⁸³ Anonymous interviewee 25, August 16 2011.

have to achieve in order to gain access to vaccines, it is explicit with regards to governance expectations without having to publicly chastise.⁸⁴ Ironically since GAVI's establishment over a decade ago, most of what BMGF has done has been "push" oriented, which only serves to reinforce perceptions that the Foundation is skewing research trajectories in pursuit of "silver bullets" as opposed to fostering systemic change. However, the more important point is that a primary focus on subsidising technical innovation is not in keeping with the optimal use of philanthropic money. This is because so long as there are forces such as GAVI prioritising health systems strengthening through incentives and creating the requisite pull (i.e. public demand for vaccines), the private sector will ensure the development of the needed deliverables.⁸⁵ In this regard GAVI and BMGF as its underwriter have been catalysts of institutional innovation in the governance of global health.

To be sure, BMGF has been subject to strong criticism, informed by rather superficial analysis. Based on a review of publicly available data on the foundation's resource-flows in the first decade of its existence, David McCoy and colleagues from the University College London suggested in a 2009 article published in *The Lancet* that BMGF exhibited a clear bias towards funding American organizations which in this period received approximately forty percent of the foundation's Global Health funding.⁸⁶ While the authors acknowledge that totals do not reflect sub-recipients, this assessment also does not consider differences in the purpose of the beneficiary organizations. PATH, for example, which received approximately ten percent of all funds, works primarily on capital-intensive projects. For example, MMV through PATH is currently coordinating the largest vaccine trial ever carried out in Africa.⁸⁷ Development on what is now RTS (Mosquirix) began in the 1980s at the Walter Reed US Army Institute of Research in Fort Detrick, Maryland as an experimental malaria vaccine. It was eventually taken over by GlaxoSmithKline, which over the last twenty years has invested \$600 million in its development. RTS is the same vaccine that was developed in the public sector but with a much-improved adjuvant. It confers immunity but relatively low efficacy (thirty to fifty percent protective efficacy) compared to most vaccines approved for use. While these effects are real and replicable, malaria experts say that it remains difficult to

⁸⁴ Anonymous interviewee 17, August 18 2011.

⁸⁵ Anonymous interviewee 25, August 16, 2011.

⁸⁶ McCoy, Kembhavi, Patel, and Luintel.

⁸⁷ Anonymous interviewee 7, February 23, 2011.

determine how well it will function in real world conditions. That said, it could certainly make a significant health and economic impact given the hundreds of millions of malaria infections incurred annually. Furthermore, it is the only vaccine out of 200 or so candidates to have accomplished this.⁸⁸ Currently in phase three and expected to be approved for use within the next five years, RTS is thus a private venture that has been heavily subsidized by public dollars which requires a tremendous amount of money to sustain and to which BMGF has contributed US\$ 100 million. MMV was first funded by BMGF in 1999 when there were very few organizations working on malaria. Because PATH's performance as an intermediary organization has been viewed positively by the Foundation, its level of funding has continued to grow.⁸⁹

PATH now collaborates with an estimated seventy-five companies in pursuit of developing solutions to complex problems.⁹⁰ From the perspective of one prominent malaria clinician-scientist, technology needs to answer clinically relevant questions. Consequently, emphasis on comparatively complex innovation should be on truly globally important challenges, whether developing vaccines for important diseases such as malaria or “point of care tests”: triage tools that—through a finger prick—provide clinicians with a sense of immediate health trajectories. From this individual's vantage point, there is no utility engineering any technology unless it can be applied in the field,⁹¹ which is in effect, the philosophy informing PATH model.

The total amount of money BMGF spends annually on improving population health in developing countries is approximately US\$2 billion;⁹² roughly seven percent of the total US\$ 28 billion in development assistance for health made available annually by all relevant actors (states, IOs, firms, NGOs etc.).⁹³ While significant, the Foundation's contribution is still a small fraction of the total, which its leaders use to justify its restricted focus. One former

⁸⁸ Anonymous interviewee 10, November 29, 2010.

⁸⁹ Anonymous interviewee 7, February 23, 2011; Donald G. McNeil Jr., “New Malaria Vaccine Is Shown to Work in Infants Under 1 Year Old, a Study Finds,” *New York Times* (October 18, 2007): Accessed October 11, 2010. <http://www.nytimes.com/2007/10/18/health/18vaccine.html?fta=y&r=0>

⁹⁰ Anonymous interviewee 8, June 9, 2011.

⁹¹ Anonymous interviewee 10, November 29, 2010.

⁹² Anonymous interviewee 27, January 4, 2012.

⁹³ Institute for Health Metrics and Evaluation, *Financing Global Health 2012: The End of the Golden Age?* (Seattle: IHME, 2012), 7.

Global Health program senior staff member has stated that the Foundation's proven niche or comparative advantage as an organization is in developing new solutions to longstanding problems. It has deliberately chosen not to work primarily at the country level through an operational model so as to not to duplicate the work of others, for this is what traditional development agencies (e.g. USAID) are considered to have always done.⁹⁴

GAVI in contrast represents an unprecedented way to solve established problems and BMGF has worked very closely with UNICEF and other organizations to better fund and deliver vaccines, negotiating for example optimal pricing schemes with partnering firms. From the perspective of its leaders, it is not in the Foundation's interest to replace existing institutions or duplicate the work of others. Instead it is to help them perform as they aspire to do, which may require developing novel bridging entities such as GAVI. From this perspective the foundation is devoted to doing the most good it can do within the pre-existing system.⁹⁵

Yet there is also real danger of BMGF's fixation on enabling new approaches and particularly new technologies. PATH creates incentives for firms to create new products and BMGF is its primary benefactor. From the perspective of one former PATH executive, the foundation is currently the principal driver of the widest global health research pipeline the world has ever seen. The danger that exists for PATH is the same danger that exists for BMGF, which lies in the risk of a technology pile-up created if the end products do not end up getting used. To prevent this from occurring, there is certainly a need for greater investment in health systems; however from the perspective of the Foundation, this responsibility lies with states not individuals.⁹⁶

One prominent perspective emerging from the leadership of the Global Health program is that the most critical impediment to attaining global health equity is the lack of capacity to ensure product delivery that exists to varying degrees throughout the developing world. From this vantage point BMGF's critics are considered ignorant of how much money actually goes into GAVI, and how much of this is in turn invested into the strengthening of

⁹⁴ Anonymous interviewee 27, January 4, 2012.

⁹⁵ Ibid.

⁹⁶ Anonymous interviewee 7, February 23, 2011.

health systems. From this vantage point, BMGF can only do so much to appease critics, in the same way that there is only so much it can do to persuade states to prioritize the strengthening of health systems. What it can and does do well is help facilitate the development of new products and the means by which they are delivered.⁹⁷

Moreover, despite its chosen niche, the Foundation's health activities are by no means limited to enabling product development and delivery. It does for example seek to enable chronic disease prevention through its support for the Global Alliance for Improved Nutrition (GAIN), a PPP focused on fostering food fortification initiatives at the country level, which was established in 2002 with funding from the Foundation, and the American, Canadian Dutch and German governments. Mirroring GAVI, GAIN is pulling governments, Multinational Corporations (MNCs) such as Danone and Heinz, academia and CSOs such as the Micronutrient Initiative to cooperate for humanitarian purposes and BMGF has driven this cooperation. Concerns have been raised that GAIN's technological and pro-business orientation lends itself more to creating new markets for participating firms than to the addressing larger humanitarian project of under-nutrition it has built itself around.⁹⁸ This does not diminish the fact, however, that BMGF is now an important source of funding for both research in the area of micronutrients and the end products of such research.⁹⁹

BMGF's program on nutrition is in keeping with its larger paradigm. As will be illustrated in Chapter 7, the Foundation is investing in nutrition through agriculture with the belief that strengthening the economic security of smallholder farmers is the central link between the two. Accordingly, its focus is on providing micro-finance seeds and facilitating bringing crops to markets with the belief that doing so will increase incomes and crop availability, and improve nutrition at the population level far more than just focusing on micro-nutrients. In theory, these goals (via AGRA) are among the most important investments they are making towards improving population health,¹⁰⁰ but they have received far less attention than their work related to communicable diseases.

⁹⁷ Anonymous interviewee 17, August 18, 2011.

⁹⁸ Christopher Kaan and Andrea Liese, "Public Private Partnerships in Global Food Governance: Business Engagement and Legitimacy in the Global Fight against Hunger and Malnutrition," *Agriculture and Human Values* 28 (2011): 385–399.

⁹⁹ Anonymous interviewee 17, August 18, 2011.

¹⁰⁰ Anonymous interviewee 1, November 19, 2010.

Moreover despite a reluctance to focus directly on health systems strengthening at the country level public, BMGF has demonstrated a clear commitment to continuing RF's tradition of institutional innovation oriented towards strengthening public sector capacity. While RF's convening power was critical for IAPHI's emergence, for example, it was BMGF in 2004 that provided the first five years of financing for the organization in the form of a US\$ 20 million start up grant, which allowed for creating the formal organization, supporting meetings, and constructing its website, technical support, and additional monies for development which were granted in 2005.¹⁰¹

Interestingly, for an organization that has been criticized for skewing transnational research trajectories and not paying sufficient attention to the principal drivers of morbidity and mortality across the global South, BMGF has spent considerable amounts of money in support of strengthening data-gathering and analytical capacities in global health. Since the release of *Investing in Health*, an emphasis on “out-come measures” has become widespread within IOs and partnerships have largely followed suit in embracing a performance-based approach to its grant-making. At the same time, a lack of reliable basic country-level baseline data (e.g. mortality rates, cause of death etc.) arising primarily from weak health systems remains a considerable problem, in large part because it makes gauging improvements exceedingly difficult.¹⁰²

BMGF's provision of US\$ 50 million in seed funding for the Health Metrics Network, a WHO-based PPP established in 2005 in pursuit of strengthening the development of evidence-based policy through improved data, is one example of an attempt by the Foundation to innovate around such glaring gaps. Another, and perhaps more significant example, was the Foundation's US\$ 105 million grant to the University of Washington to create the Institute for Health Metrics and Evaluation (IHME) in 2007, a highly specialized entity focused on improving the quality of global health data through sophisticated statistical analysis. From the perspective of one former Foundation official, because data is often politicized, entities such as IHME are best situated at independent academic centres as opposed to within IOs, and particularly WHO provided they are working in partnership with

¹⁰¹ Anonymous interviewee 13 March 1, 2011.

¹⁰² Amir Attaran, “An Immeasurable Crisis? A Criticism of the Millennium Development Goals and Why They Cannot Be Measured,” *PLoS Medicine* 2(10) (2005): e318

the countries under scrutiny and not manipulating data autonomously. For while WHO portrays itself as the definitive collector and miner of the world's health data, it is perceived by some—including former staff—to lack the resources needed to perform the business of methodological innovation in analytics. From this perspective, WHO's moral and political responsibility pertaining to global health statistics lies in ensuring the findings of the IHME's of the world are reported, and that such information dissemination occurs in a standardized format.¹⁰³

6.32 The absence of 'boots on the ground'

A second criticism of BMGF has been that despite a surge in staff numbers, its continuing lack of dedicated field staff embedded within the countries where it funds programs is limiting its understanding of the problems it seeks to address. This absence of “boots on the ground” has substance in that while the foundation has country offices, for in China,¹⁰⁴ and in India,¹⁰⁵ where staff oversee the disbursement of funds and provide technical support, its field presence is limited. One response to this is that maintaining offices in countries is not the only way to keep in touch with what is actually going on at the local level and can actually distract from this by limiting the focus to a few particular locations.¹⁰⁶

Yet BMGF's lack of operational programs reveals two larger and inextricably linked challenges. The first is that despite demonstrating a willingness to learn from other actors and in particular RF, building a large global health program from scratch means a steep institutional learning curve in a short period, leading to some inevitable missteps.

According to one former senior staff member, the popularity of many ideas informing public health policy has waxed and waned (e.g. the utility of the community health worker), largely based on demonstrated effectiveness. Newer organizations, because of their lack of

¹⁰³ Anonymous interviewee 25, August 16, 2011.

¹⁰⁴ Kristi Heim, “Gates Foundation, China to Partner in HIV Prevention,” *Seattle Times* (November 14, 2007), 161-62.

¹⁰⁵ The Times of India, “Bihar Government to Sign MOU with Gates Foundation,” *Times of India* (January 30, 2010). Accessed May 5, 2011, <http://timesofindia.indiatimes.com/india/Bihar-govt-to-sign-MoU-with-Gates-Foundation/articleshow/5516887.cms>

¹⁰⁶ Anonymous interviewee 25, August 16, 2011.

institutional baggage, often bring fresh insight to longstanding challenges. Yet institutional memory—which new organizations lack—is also important as it (usually) ensures that old fads abandoned for good reason remain confined to history. Because the majority of BMGF’s staff members lack experience in public health, the organization is having to discover on its own where the big constraints on strengthening public health in developing countries lie.¹⁰⁷

The second challenge posed by BMGF’s lack of operational programs relates to its ability to sustain its influence within the contexts where it seeks to catalyze change. Formal education training programs delivered at the country-level were for decades the basis by which RF was able to embed ideas and norms into public policy making institutions. This illustrates that investing in human resources is not about creating or distributing technology but instead about investing in professional leadership. Historically, and continuing today, RF’s focus—while certainly on science and technology—has been on capacity building, while to date BMGF is more focused on end-points and magic bullets.

While BMGF has brought tremendous resources to bear on technological development, the next generation of developing country scientists require not only access to advanced training but also to physical resources which countries often cannot or choose not to provide and the Foundation has to date balked at investing in this.¹⁰⁸ Interestingly, the limited number of investments that BMGF has made in post-secondary education related to global health have been at the University of Washington, which in addition to IHME include the department of Global Health, which was launched with a US\$ 10 million start-up grant.¹⁰⁹ However, as critics have pointed out very publicly, partnerships, universities and NGOs in high-income countries are poorly positioned to address these issues. This suggests then that the Foundation’s human resources investments would be better spent on people and organizations in low-income countries.¹¹⁰

¹⁰⁷ Anonymous interviewee 25, August 16, 2011.

¹⁰⁸ Anonymous interviewee 13, January 20, 2011.

¹⁰⁹ Eric Engleman, “UW Signs Lease at Seattle’s South Lake Union,” *Puget Sound Business Journal* (January 9, 2006), accessed April 11, 2011.

http://seattle.bizjournals.com/seattle/stories/2006/01/09/daily13.html?jst=b_in_hl

¹¹⁰ Black, Bhan, Chopra, Rudan, and Victoria.

RF's legacy has been that of capacity building in science. BMGF, in contrast, while still investing in science, is focusing primarily on bringing about dramatic changes in SEI, which tends to mean creating quick technological fixes to large problems as opposed to the much longer term capacity building exhibited by RF of the past.¹¹¹ This gets back to the push-pull concept and the Foundation's natural comparative advantage in global governance. As a private, well-endowed organization, BMGF has all the necessary resources to create initiatives with built-in incentives to pull beneficiaries towards improving their performance and lock-down learning in societies to avoiding the backsliding that often accompanies every transition to a new political regime. From the perspective of a former high-ranking Global Health program staff member, it is critical then that advocacy—which is becoming a larger component of BMGF's activities—is also directed at developing countries and not just to the developed world where it currently focused.¹¹²

6.33 Too much emphasis on firms and markets

A third major criticism of BMGF relates to Bill Gates' expressed support for governments developing greater market incentives to engage for-profit entities to innovate for the needs of the world's poor. Gates first advanced the idea of “creative capitalism” at the 2008 World Economic Forum in Davos, Switzerland. His speech focused on the need for developing a global system that draws out innovators using profit incentives wherever it is possible. Where profit cannot be assured, he argued, then states need to recognize and create some form of reward for the altruistic behavior of firms, on the assumption that the combination of assured profit and recognition of ethical engagement will drive positive change. Since its inception, BMGF has provided such incentives by leveraging funding from states in order to subsidize firms to take risks that they would not take otherwise and bring their expertise to table of collective action.¹¹³

¹¹¹ Anonymous interviewee 1, November 19, 2011.

¹¹² Anonymous interviewee 25, August 16, 2011.

¹¹³ Bill Gates, “Making Capitalism More Creative,” (speech, World Economic Forum, Davos, July 31, 2008), Accessed March 11, 2010, <http://www.gatesFoundation.org/speeches-commentary/Pages/bill-gates-2008-world-economic-forum-creative-capitalism.aspx>; Gates, “Making Capitalism More Creative,” *Time* (July 31 2008), Accessed: March 11, 2010, <http://www.time.com/time/printout/0,8816,1828069,00.html>.

An example of this vision in practice is the Advanced Market Commitment (AMC) model, which was first conceptualized by Harvard economist Michael Kremer as a means of catalyzing industry interest in developing new vaccines for neglected diseases. The model was based on a simple yet elegant premise; that an advanced commitment on the part of purchasing organizations to buy a specified amount of product at a specified price would offer a way of compensating for a lack of traditional market demand.¹¹⁴

In 2007 this model was embraced by BMGF, Canada, Italy, Norway, Russia, and the United Kingdom, who committed a total US\$ 1.5 billion to launch the first Advance Market Commitment (AMC) to expedite the development of a vaccine for pneumococcal pneumonia and meningitis, which causes an estimated 1.6 million annual deaths.¹¹⁵ Yet the model has also attracted criticism, such as that expressed by Médecins Sans Frontières (MSF), which has argued that the AMC effectively subsidizes Northern firms' participation costs in GAVI by providing firms such as Pfizer and GSK with an artificially fixed profit level.¹¹⁶

The AMC is illustrative of how interest in global health that is now reaching the highest level of politics can both have both positive and negative connotations. The early visionaries and proponents of advance purchase agreements believed that through advertising, one billion dollars had been reserved for the benefit of innovators who can design a specific vaccine with well-defined characteristics, such innovation would be assured. Yet according to one individual well versed in the challenges of vaccine research and development, the reality is that the costs of innovation greatly exceed the AMC. Consequently, in the fifteen years since its launch, the goal has shifted from removing the risk of engaging in R&D to other ideas

¹¹⁴ Michael Kremer and Rachel Glennerster, "A World Bank Vaccine Commitment," Brookings Institution Policy Brief no. 57, (Washington: Brookings Institution, 2000); Michael Kremer, Barder Owen, and Heidi Williams, "Advanced Market Commitments: A Policy to Stimulate Investments in Vaccines for Neglected Diseases," *The Economist's Voice* 3, 3. (2006): 1-6.

¹¹⁵ GAVI Alliance, "Five Nations and the Bill and Melinda Gates Foundation Launch Advance Market Commitment for Vaccines," (09/02/2007). Accessed January 22, 2012. <http://www.gavialliance.org/library/news/press-releases/2007/five-nations-and-the-bill-and-melinda-gates-foundation-launch-advance-market-commitment-for-vaccines/#sthash.11T1sY4n.dpuf>

¹¹⁶ Declan Butler, "Cash Crisis Looms for Vaccine Drive," *Nature* 464, no. 338 (2010): 338. doi:10.1038/464338a?

including building up production capacity and serving as a pool of funding with which to purchase and distribute existing vaccine.¹¹⁷

However according to this same individual, with the British and Italian governments each committing hundreds of millions of dollars to the pneumococcol vaccine pilot project, the question is no longer to see whether the AMC is the best or even desirable approach but how to make the shoe fit no matter what it takes. From this perspective, many well-intentioned and intelligent people have spent a considerable amount of time and money trying to make the AMC work, and as a consequence considerable political “face” (i.e. that of Gordon Brown as well as Italian Finance Minister Giulio Tremonti, whose government committed over half a billion dollars to the fund) was on the line if it was deemed a failure, meaning a political point of no return had been crossed.¹¹⁸

It is the view of many informed observers that the most unfortunate aspect of the AMC idea—and this relates to the criticism generated by MSF—is that it may have paradoxically stalled a reduction in the price of existing pneumococcol vaccine.¹¹⁹ For example both Merck and GSK have announced reductions in the price of rotavirus vaccine.¹²⁰ However with the AMC locking into place a specific price to be paid to producers for pneumococcal vaccines, there is no incentive for such producers to reduce the unit price.

The AMC provides an important larger lesson in global governance: when any new idea is proposed as a solution to a big complex problem, the entire community of problem solvers need to critically examine who is claiming its utility and why. From the perspective of someone with decades of experience in facilitating the development of new vaccines, the AMC concept was conceptualized and driven by individuals with little understanding of vaccines or product development. However from the perspective of an economist, the AMC

¹¹⁷ Anonymous interviewee 6, June 23, 2011; Anonymous interviewee 9, November 29, 2011; Anonymous interviewee 5, June 30, 2011.

¹¹⁸ Anonymous interviewee 9, July 12, 2011.

¹¹⁹ Ibid.

¹²⁰ Lizell B. Madsen, Marte Ustrup, Thea K. Fischer, C. Bygbjerg, and Flemming Konradsen, “Reduced Price on Rotavirus Vaccines: Enough to Facilitate Access Where Most Needed?” *Bulletin of the World Health Organization* 90 (2012): 554-556.

seemed like a logical way to add on to the success of GAVI.¹²¹

The AMC is illustrative of the challenge of how to pull innovation out of a global system that still exists in a patchwork form.¹²² While it is not clear to what extent Bill Gates pushed the concept on the global stage, only now are its strongest advocates conceding that it has not worked as intended and that there will likely not be a second one. Given the finite resources and perhaps most importantly the political will to address global health challenges, there is great danger in collectively falling victim to big claims lacking evidence of effectiveness. Interestingly as alluded to by MSF, the mechanism could still be used for its original purpose to entice emerging market manufacturers as per the meningitis vaccine.¹²³ While the AMC may have been conceptually flawed, the general vision of collective action informing it predicated on using market systems to drive positive change is wholly consistent with RF's approach to global governance adapted to the context of the neoliberal era. Placing firms at the centre of the collective was a radical departure from the international problem-solving paradigm centred around states and IOs in the mid-1990s. However it is now the norm and RF and BMGF have played key roles in catalyzing this shift in approach to global governance.

At the same time, concern has been expressed that BMGF's support for including firms in global health governance extends well beyond R&D.¹²⁴ In 2007 an International Finance Corporation report funded by the BMGF argued for embracing and improving private health care where it is predominant, such as in Sub-Saharan Africa where approximately half of all care is delivered by private providers,¹²⁵ which has been construed by some as evidence of the Foundation's preference for private care delivery.¹²⁶

¹²¹ Anonymous interviewee 9, November 29, 2011.

¹²² Anonymous interviewee 6, June 23, 2011.

¹²³ Anonymous interviewee 9, November 29, 2011.

¹²⁴ David Stuckler, Sanjay Basu, and Martin McKee, "Global Health Philanthropy and Institutional Relationships: How Should Conflicts of Interest Be Addressed?" *PLoS Med* 8, no.4 (2011): e1001020. doi:10.1371/journal.pmed.1001020

¹²⁵ International Finance Corporation, *The Business of Health in Africa: Partnering with the Private Sector to Improve People's Lives* (Date of Publication, 2007), accessed Month Day, Year, [http://www.ifc.org/ifcext/healthin africa.nsf/AttachmentsByTitle/IFC_HealthinAfrica_Final/\\$FILE/IFC_HealthinAfrica_Final.pdf](http://www.ifc.org/ifcext/healthin africa.nsf/AttachmentsByTitle/IFC_HealthinAfrica_Final/$FILE/IFC_HealthinAfrica_Final.pdf)

¹²⁶ See for example David McCoy, "The Gates Foundation. In *Global Health Watch 2: An Alternative Global Health Report*," (New York: Zed Books, 2008), 240-259.

However, one high-level perspective from within the Foundation is that the best means of getting people access to high quality health care will vary from country to country and is thus highly context dependent. In most low and middle-income countries it is via the public sector. Yet for specific services, for example HIV treatment services for vulnerable populations (i.e. intravenous drug users and Men Who Have Sex With Men (MSM), in places where they face repression, health care-delivery is considered to be better done by community-based or private organizations. For some issues (e.g. family planning) there is a definite middle ground where both private and public sectors play an important role. What is the right public-private mix is therefore considered by the Foundation's leadership to be highly contextualized, and BMGF does not have an a priori bias towards either.¹²⁷

The African Comprehensive HIV/AIDS Partnership (ACHAP) is an example of this blending of roles. Established in 2000, the ACHAP is a PPP between the Government of Botswana (which provides health care), BMGF (a benefactor), and Merck (which provides anti-retroviral drugs) which is focused on the prevention and treatment of HIV/AIDS, through the universal access to ARV.¹²⁸ In the eyes of one former director of a national public health agency with significant international experience, it does not matter whether care is delivered by public or private providers, so long as there is access, the quality of care is sufficiently high, the cost is manageable and outcomes are good. Cultural expectations may lend themselves to private care, for example, in the United States, but not in other contexts, such as Canada. What does matter is if one consistently fails to deliver on those metrics.¹²⁹ Whether ideology as opposed to a willingness to accept contextual specificity dictates BMGF's policy positions on public health issues is not clear. What is clear however is that the Foundation has not hesitated to embrace market-based measures and the business community out of a belief that the private sector is integral to overcoming longstanding challenges to public health challenges plaguing the world's poorest countries.

¹²⁷ Anonymous interviewee 7, February 23, 2011.

¹²⁸ Ilavenil Ramiah and Michael R. Reich, "Public-Private Partnerships and Antiretroviral Drugs for HIV/AIDS: Lessons from Botswana," *Health Affairs* 24 (2005): 545.

¹²⁹ Anonymous interviewee 13, March 1, 2011.

6.4 The Future of BMGF's Global Health Program

Since its establishment, the focus of BMGF's Global Health Program has been on providing material support for basic and applied research, facilitating the formation of PDPs and novel financing mechanisms, and enabling partner organizations involved in the delivery of health products and services. Recent leadership changes and grant-making give little reason to suggest these general preferences will change in the next ten years. At the same time, there is evidence the program is evolving.

The best example of this continuity came at the 2010 World Economic Forum, when Bill Gates committed the Foundation to providing GAVI with US\$ 10 billion over ten years for vaccine development and delivery. This was the largest grant ever made by the Foundation, leaving little doubt as to where BMGF priorities lie.¹³⁰

This emphasis on enabling the development of new vaccines was also evident in late 2011, when Trevor Mundel left his position in the Global Health of Development at Novartis to succeed Tachi Yamada as President of the Global Health program. Both Mundel and Yamada came to the foundation from R&D leadership positions within the pharmaceutical industry; however the two have actually had very different career paths. Prior to working at GSK, Yamada had a long career in academia engaging in basic research and chairing a department of medicine, and working within health systems (as a clinician running a practice and later as chief of medicine in a hospital). Mundel's career in contrast has been spent entirely in the private sector on research and development.¹³¹

The thinking behind maintaining a focus on vaccines is a certainty that the number of vaccines in use will greatly increase over the next twenty-five years. If history is any guide, this may be a logical assumption, for in the past seventy-five years, the number of commonly administered vaccines has increased from two to eighteen (in certain jurisdictions thirty). The Foundation's leadership believes however that not only will the future standard vaccine

¹³⁰ Paul Chinook, "The Gates Foundation's Expansion of Its Support, and the thinking that Lies Behind It," *TropIKA* (01/02/2010). Accessed March 15, 2010. <http://www.tropika.net/svc/news/20100201/Chinook-20100201-News-Gates-Letter>

¹³¹ Anonymous interviewee 27, January 4, 2012.

regime be much larger, but that the range of applications will also increase (i.e. for preventing chronic conditions such as heart disease and cancer).¹³²

While the Foundation's leadership believes that BMGF can and should play a role in catalyzing innovation in vaccines development, they have also committed to seeing the organization play a leading role in ensuring the equitable distribution of the fruits of this research. Recent changes in BMGF leadership structure suggests the Foundation will indeed play a greater role on the delivery side, which may signal an increasing emphasis on health systems strengthening. In 2012, PATH CEO and President Chris Elias was appointed to replace Sylvia Mathews Burwell as President of the Global Development program, which was initiated in 2006 with an initial focus on agriculture and financial services. It would now appear however that the delivery aspect of the health program is being integrated into the global development program, sharpening Trevor Mundel's responsibility for discovery and development, but giving Elias— who has a wealth of experience working with organizations on the ground— full responsibility for the delivery side, thus emphasizing that each are part of a larger whole.¹³³ The hope expressed by William Foege is that future technologies will inform the system of product delivery, leading to paradigm shifts in the same way that vaccination changed how public health was approached.¹³⁴ While it is difficult to envision what these innovations will look like from the vantage point of the present, those setting the Global Health program's trajectory evidently are hoping the Foundation will play a catalytic role in their realization.

In addition to product development and delivery, the Global Health program's leaders are confident that the Foundation will play a key role in the continual improvement to the political processes informing global health governance. Foege predicts for example that firms' relevance in global health will only increase out of both self-interest for new markets and a changing commitment to social welfare.¹³⁵ If this proves to be the case, BMGF's established links with industry will make it well positioned to continue to play diplomatic role at the public-private interface.

¹³² Anonymous interviewee 17, August 18, 2011.

¹³³ Anonymous interviewee 27, January 4, 2012.

¹³⁴ Interviewee with William Foege, August 18, 2011.

¹³⁵ Ibid.

Initiatives such as GAVI and Global Fund illustrate that global health is an ascending political issue and BMGF has played an important role in this. Not so long ago governments expressed little interest in public health beyond national borders and in political cooperation in pursuit of reduced common health risks. However this has most certainly changed,¹³⁶ and an increased understanding of the causes and economic costs of disease will only further cement this interest, as evidenced by the Bush administration's commitment to global health while rejecting other established norms related to international cooperation.

6.5 Conclusion

BMGF's heavy emphasis on underwriting the development of what it hopes will be high-impacting technology is a continuation of RF's tradition of enabling innovation in science, albeit with a comparatively much narrower focus. However its willingness to invest large amounts of capital into unproven technologies has made the foundation susceptible to charges of skewing global research trajectories via technology-focused initiatives such as GCGH and ignoring low-cost interventions that have already proven to be both efficacious and cost-effective.

Moreover its reservation for directly supporting health systems strengthening at the country-level, while actively promoting greater private sector involvement in mechanisms of collective action has also attracted considerable criticism. The Foundation has relied heavily on PDPs and IGAs in its efforts to enable the development, production and delivery of needed technologies to the world's poorest people. In this regard it has been more of an emulator than an innovator in global health governance. Nevertheless the success of GAVI demonstrates that there is continuing merit in the emulation of what is effectively a Rockefeller template.

Critics also point to BMGF's expressed preference for market-based solutions to multifaceted problems, as evidence of the Foundation's role in the advancement of a corporate agenda in global governance. This preference stems in part from the fact that, to

¹³⁶ See for example Michael A. Stevenson and Andrew F. Cooper, "Overcoming Constraints of State Sovereignty: Global Health Governance in Asia," *Third World Quarterly* 30, no. 7 (2009): 1379-1394.

date, much of the Foundation's leadership has come from the private sector. An awareness of private sector needs is useful for engaging firms, however, as the advanced market commitment for a vaccine for pneumococcal pneumonia and meningitis has shown, providing direct monetary incentives for firms can in fact work against the end goal of increasing access to needed health technologies.

As a private Foundation, BMGF is vulnerable to such challenges because critics see a small elite group of people controlling the purse strings for initiatives that will affect many people. However as noted by William Foege, these perceptions do not detract from the fact that in a short period of time, BMGF has galvanized political interest in global health and driven the development of new approaches to cooperation oriented towards the pursuit of global health equity.¹³⁷

At the same time, there is a continuously expanding cadre of experts acting as advisors, and as a consequence, with the exception of the core commitment to global health equity embodied by the belief that "every life has equal value," the ideas informing BMGF's work continue to change and increase in number. For example, while the thinking of James Maynard, a former supervisor of the CDC's program on Hepatitis B, was critical for vaccines becoming a central plank of the Global Health program, he has not been influential in the Foundation's work since the establishment of GAVI.¹³⁸ Nevertheless it is evident that BMGF has provided a home for innovators who share with the Gates family particular normative arguments and understanding of determinants of and solutions to particular problems, and in this regard the Foundation, must be seen—like RF before it—as an incubator of epistemic communities.

The Foundation's advocacy work, and specifically its use of media, has allowed it to frame how the problems it involves itself in are understood in both policy arenas and in the public sphere. Policy and advocacy initiatives account for approximately ten percent of the foundation's total annual granting budget, which now exceeds US\$ 3 billion. BMGF advocacy funds have been used to underwrite health awareness training programs for

¹³⁷ Interview with William Foege, August 18, 2011.

¹³⁸ Anonymous interviewee 17, August 18, 2011.

journalists and enable coverage on particular issues (i.e. river blindness), which has led to concerns expressed by unaffiliated journalists that the Foundation's resources are being used to manipulate public opinion (i.e. focusing on successes as opposed to structural challenges).¹³⁹

This attempt to garner discursive and instrumental power is however not dissimilar from other non-state actors: for example, Greenpeace uses media in its advocacy campaigns oriented towards instilling an ecological consciousness at the societal level.¹⁴⁰ Moreover the issues BMGF funds are now bringing illumination to were less than two decades ago covered by only a handful of journalists such as Laurie Garrett. Consequently, it could be argued that this money is ensuring mainstream media's interest in a topic it previously neglected.

What differentiates BMGF from most other non-state actors vying for influence in global health governance is the funding it has at its disposal which has proven to be a source of structural power. Grant making is allowing the foundation to shape global health research trajectories, and providing it with representation on most of the boards of the partnerships it has helped forge. WHO is, for example, not only an equal partner with the foundation within the H8,¹⁴¹ it is also now a grantee of the foundation, making it accountable to it. Indeed from the perspective of one former foundation executive, it is undeniable that policy makers increasingly trek to Seattle to see reality as BMGF sees it because of the huge resources the foundation makes available for addressing particular public health problems.¹⁴²

¹³⁹ Sandi Doughton and Kristi Heim, "Does Gates Funding of Media Taint Objectivity?" *Seattle Times* (February 19, 2011), accessed April 8, 2011.

http://seattletimes.nwsourc.com/html/localnews/2014280379_gatesmedia.html; see also the Living Proof Project, a multimedia initiative launched in 2009, illuminating success-stories of American global health projects <http://www.gatesFoundation.org/livingproofproject/Pages/what-is-living-proof-project.aspx>

¹⁴⁰ Paul Wapner, *Environmental Activism and World Civic Politics* (Albany: SUNY Press, 1996).

¹⁴¹ The H8 is an informal group of eight organizations that collaborate in the formulation of global health policy. In addition to the Foundation, its membership is comprised of WHO, the United Nations International Children's Fund, the United National Population Fund, the joint United Nations programme of HIV/AIDS, the World Bank, the Global Fund and GAVI Alliance.

¹⁴² Anonymous interviewee 15, January 18, 2011.

Certainly then BMGF is an important player in the governance of global health. Yet has its material influence been overstated? Yes and no. Research and development remains a critical public good. RF did not have the money to see products through the entirety of the research and development process, which is why the PPP concept emerged. BMGF, in contrast, obviously does. At the same time, less than 0.5 percent of the US\$ 6.5 trillion that world governments expend annually (on health)¹⁴³ is being devoted to improving—mostly indirectly—the health of the world’s most impoverished people.¹⁴⁴ Thus while BMGF funding comprises a small but nonetheless significant slice of the global aid money pie (seven percent), in the grand scheme of things it is really is just a drop in the bucket (comprising 0.03 percent of the total global health expenditures).

Despite its reticence to fund the construction of brick and mortar institutions or human resource training programs in developing world, which the Foundation considers to be the responsibility of states, BMGF is still directly contributing to health-related public sector capacity building. This is evident in its support for informal networks focused such as the International Association of Public Health Institutes, and data gathering initiatives such as the Health Metrics Network and the University of Washington-based Institute for Health Metrics and Evaluation. These efforts illustrate that the Foundation is not seeking to undermine multilateralism; although GAVI clearly illustrates it is willing to work outside of the traditional UN system, it feels doing so compromises its end goals. In this regard, BMGF embodies the neo-functional prediction, in which technocratic influence over collective action would not be limited to those working out of the IOs.

What is clear is that despite its evident biases, in its short life, BMGF’s Global Health Program has made a huge contribution to illuminating the persistence of global health disparities, and initiatives such as GAVI have paved the way for other organizations such as the Global Fund that have succeeded in bringing resources to neglected health issues. As noted by Gro Harlem Brundtland, “there is a critical mass of expertise now based in Seattle, so it’s on everyone’s itinerary.”¹⁴⁵

¹⁴³ World Health Organization, *World Health Expenditure Atlas* (Geneva: WHO, 2011).

¹⁴⁴ Institute for Health Metrics and Evaluation, 7.

¹⁴⁵ Tom Paulson, “Gates Foundation Out to Break the Cycle of Disease.”

In sum, the tremendous capital made available through grants combined with its perceived expertise have together provided the foundation with an ability to create incentives for developing high-impacting technologies, which in the words of one scientist has “changed the way innovators view at development aid.”¹⁴⁶

¹⁴⁶ Anonymous interviewee 11, January 20, 2011.

Chapter 7: BMGF's Influence over the Governance of Global Agricultural Development

7.0 Introduction

This chapter begins by examining the motivations behind the Bill and Melinda Gates Foundation's (BMGF's) decision to enter the domain of agricultural development and its reliance on a small group of individuals with deep ties to the Rockefeller Foundation (RF) to guide its early agricultural initiatives. As per its health program, the Foundation has embraced both the RF's penchant for enabling Science-Enabled Innovation (SEI), and the institutions and frameworks of collective action, which RF played a lead role in creating, such as the Consultative Group on International Agricultural Research (CGIAR) system. It has consulted with and employed former RF staff and similarly used its wealth and convening power to bring public and private actors together to discuss and formulate policies for strengthening agricultural systems and addressing agriculture-associated food insecurity in low-income countries. In many ways BMGF's entry into agricultural development is a continuation of what appears to be the coming demise of RF's work in this area, and brought attention to a neglected issue.

BMGF's involvement in agricultural development began less than a decade ago when there was still limited interest on the part of wealthy countries to invest in agriculture. In the twenty-five years preceding BMGF's entry into agricultural development in 2006, total Overseas Development Aid (ODA) increased by nearly two hundred and fifty percent.¹ However the share that was specifically devoted to total agriculture fell from the peak of seventeen percent of the total in 1982,² to three percent in 2005. Sub-Saharan Africa specifically experienced a net thirty-five percent reduction in agricultural aid over this period.³ The majority of these reductions occurred during the 1990s when multilateral organizations were experiencing severe cuts to their own, which explain in part why the

¹ Lidia Cabral, "Funding Agriculture: Not 'How Much?' But 'What for?'" *ODI Opinion Paper 86* (London: Overseas Development Institute, 2007).

² Jamie Morrison, Dirk Bezemer, and Catherine Arnold, *Official Development Assistance to Agriculture* (London: DFID 2004).

³ Cabral.

greatest decreases to agricultural aid were by multilateral donors, who reduced agricultural development spending by eighty-five percent between 1980 and 2002.⁴ These cuts were visible at the country-level in forty-four countries, where the total share of public sector spending devoted to agriculture was reduced from eleven percent in 1980 to roughly seven percent in 2002.⁵ Overall, the implementation of neoliberal policies adversely affected agriculture in developing countries to the point that an ongoing food crisis threatens much of the world's population.

Building private sector capacity for agriculture with Sub-Saharan Africa and political will within African governments for ensuring that agriculture is sufficiently prioritized was the basis for establishing the Alliance for a Green Revolution in Africa (AGRA), to which this chapter subsequently turns. While AGRA was the brainchild of the RF, BMGF has become its primary financial backer. BMGF's enablement of AGRA is significant, I argue, as the organization has been a driving force behind galvanizing both public and private sector interest for African agricultural products and markets.

The chapter casts light on additional initiatives highlighting RF and BMGF's common commitment to SEI and underwriting organizations and partnerships focused on this goal, which provides opportunity to explore the idea that much of the contemporary tension related to BMGF's interest in agricultural development relates to BMGF leadership's expressed belief that biotechnology and more specifically Genetic Engineering (GE) is essential for ensuring food security in low-income countries.

However despite a common commitment to enabling new technologies intended to benefit the world's poorest people, this chapter shows that BMGF's agricultural program is by no means a mere replication of RF's program. I show for example how the combination of BMGF's close working relationship with Multinational Corporations (MNCs) such as Monsanto - its "hands-on" grant making style and its lack of operational or training programs - clearly make BMGF's agricultural program a far more narrowly focused animal

⁴ Morrison, Bezemer, and Arnold.

⁵ Shenggen Fan and Anuja Saurkar, *Public Spending in Development Countries: Trends, Determination and Impact* (Washington: International Food Policy Research Institute, 2006).

from that of the RF. Indeed the BMGF's principal focus in agriculture to date has been on enabling the development of new high-impacting technologies, such as drought tolerant crop varieties. This high-tech focus has meant close collaboration with MNCs such as Monsanto, and BMGF has actively recruited agricultural program staff from the private sector on the basis that such partnerships will continue to be crucial to developing technologies for smallholders across the global South. To critics, this proximity to business and an ongoing predilection for technological solutions, and in particular genetically modified organisms for complex and highly politically determined problems, make BMGF's motivations highly suspect. The chapter shows however that while BMGF is less innovative than RF in terms of fostering new governance frameworks, its track record of political advocacy oriented towards reversing the apathy in ODA focused on agriculture that has characterized the neo-liberal era clearly demonstrates it is not seeking a continuation of the status quo.

I demonstrate how the Foundation's political influence in both national and international policy making arenas has been largely indirect but is nonetheless palpable. Its underwriting of advocacy undertaken by affiliated epistemic communities is illustrated through the example of The Chicago Council Report entitled, "Renewing American Leadership in the Fight Against Global Hunger and Poverty," a normative document crafted specifically to increase the status of agriculture within American ODA. This chapter shows how BMGF provided funding for a similar initiative targeting EU member states (The Montpelier Panel) while providing the catalytic funding for two very different initiatives at the global level. The first examined is the World Food Program (WFP) pilot program, Purchase for Progress, which departs from the practice of importing food aid into countries undergoing humanitarian emergencies by purchasing food products directly from small holder farmers in the regions where operations. The second initiative examined is The Global Agriculture and Food Security Program (GAFSP), a new global funding mechanism for existing country-led agricultural initiatives and multilateral organizations such as CGIAR, for which the Foundation also provided seed money.

This chapter then turns to the Foundation's relationship with CGIAR system and the United Nations Food and Agriculture Organization (FAO) before concluding with brief examinations of the limits of its advocacy efforts to shape the rules of the world and the

actions of other actors impacting how the world's poorest populations sustain themselves through agriculture, and what the future of BMGF's agricultural program may hold.

My concluding argument is that while its focus is narrower than its ideational ancestor, overall BMGF is following in the wake of RF as a catalyst of institutional innovation oriented towards increasing access to new technologies intended to benefit the world's poorest people, yet designed to work within the parameters of the existing state-imposed rules of the world. In general the Foundation's approach to agricultural development has mirrored its approach to health.

Because BMGF seeks to catalyze changes that, if achieved, will take many years to materialize, I argue that any pronouncements concerning its long-term significance to the governance global agricultural development are premature. This is not to say that its ideas and strategies for placing these ideas within policy debates have not been laid out, for they have. Rather, it is premature to pronounce whether BMGF's strategies will yield their desired results over the long term. Central to Foundation's efforts in agricultural development, for example, is its active engagement of corporate actors to use their resources to help historically marginalized populations, which I argue originates in a belief that it is good business to lift people out of poverty. The corollary of this is that BMGF's presence in the agricultural realm is increasing opportunity for the private sector to become formally involved in the governance of what have historically been public sector-managed challenges, which creates opportunity but also vulnerability.

To date little has been published in academic sources on the subject of BMGF's agricultural initiatives. The primary empirical contributions of the chapter lie in the plethora of details derived from a variety interviews with early advisors to the program and its core staff, as well as members of supported epistemic communities and several of its critics.

7.1 BMGF Turns Its Attention to Agriculture: 2004 - 2009

BMGF's interest in agriculture originated in the Global Health Program's examination of biofortification as a novel means to decrease immune deficiency driving vulnerability to

infection.⁶ Theoretically, given that the Foundation's initial global focus was restricted to health, it might seem logical that a program on water-sanitation and hygiene would have preceded a food and agriculture program, but in practice this did not occur.⁷ Bill Gates in particular was motivated by the logic that improvements to staple crops could improve nutrition and with it the overall health of poor people consuming those crops, and that increased incomes via better market access and increased yields would only augment this effect.⁸

The first agricultural-related grant of US\$ 25 million was made in late 2003 in support of the CGIAR's HarvestPlus initiative.⁹ A micronutrient project launched in 2002 from funding made available by the International Food Policy Research Institute (IFPRI) and International Centre for Tropical Agriculture (CIAT), HarvestPlus was one of the first of CGIAR's new Grand Challenges for Global Health (GCGH) programs. These time-bound research programs were set up as multi-institution partnerships intended to bring high-impacting solutions to complex problems perceived to be impeding global agricultural development,¹⁰ making them very much in line with BMGF's chosen niche.

However, despite the tantalizing potential of biofortification, the Foundation's leadership was initially cautious about moving into agriculture when it became apparent that agricultural development or the lack thereof was reflective not only of gaps in science but of a longstanding lack of political will on the part of governments in both the North and South to prioritize public infrastructure supporting agricultural systems. It was ultimately persuaded to do so however by the leadership of FAO, CGIAR, World Bank, and RF, who in the wake of the Global Alliance for Vaccines and Immunization's (GAVI's) success realized the potential funding and star-power that Gates could bring to issues that had long been neglected by the world's wealthy countries.¹¹

⁶ Anonymous interviewee 16, December 9, 2010.

⁷ Anonymous interviewee 28, July 6, 2011

⁸ Anonymous interviewee 16, December 9, 2010; Anonymous interviewee 21, February 8, 2011.

⁹ Anonymous interviewee 16, December 9, 2010.

¹⁰ Robert Herdt, "People, Institutions, and Technology: A Personal View of the Role of Foundations in International Agricultural Research and Development 1960–2010," *Food Policy* 37 (2012): 179–190; Anonymous interviewee 16, December 9, 2010; HarvestPlus, *Breeding Crops for Better Nutrition*, Washington: HarvestPlus, International Food Policy Research Institute, 2006).

¹¹ Anonymous interviewee 22, November 12, 2010; Anonymous interviewee 28, July 6, 2011

For an organization devoted to improving the health of the world's poorest people, investing in agriculture was a logical next step, especially given that three quarters of the target beneficiaries derive their income and food through farming. In this sense, the family farm was seen by BMGF staff as the customer, and the Foundation as a provider of new tools and frameworks intended to increase the customer's agricultural and economic productivity.¹² As such, innovation in science and governance were identifiable as short and long term priorities from the program's origins, which helped to clarify and expedite the Foundation's agricultural development efforts.¹³

BMGF first hired Roy Steiner to advise on where in the agricultural spectrum the foundation could to make unique contributions. Trained as an agricultural engineer, Steiner previously worked at RF through the Warren Weaver Fellows program, which was created by RF Vice President Kenneth Prewitt to bring on annual basis a small number of individuals with exceptional potential to work at RF for one to two years. After leaving RF, Steiner was employed by McKinsey as a consultant, before establishing and managing a number of businesses in Sub-Saharan Africa.¹⁴

With the help of external consultants such as Cornell-based agricultural economist and former RF Vice President Robert Herdt, Steiner led an examination across the entire agricultural value chain to identify BMGF's comparative advantage.¹⁵ BMGF's utility, it was ultimately determined, would be on catalyzing economic sustainability at the local level (i.e. facilitating seed development and dissemination and access to credit and markets), areas in which traditional development efforts were perceived to have fallen short. The long-term success of its efforts would depend on other challenges (i.e. land tenure issues, transportation and irrigation systems) being addressed; however these would have to be addressed by those actors with the capital and legal authority to do so (i.e. development banks and governments acting alone or cooperatively). At the same time, the Foundation would support the political advocacy of certain organizations such as the Chicago Council

¹² Anonymous interviewee 29, July 20, 2011.

¹³ Anonymous interviewee 28, July 6, 2011.

¹⁴ Anonymous interviewee 19, November 29, 2010; Anonymous interviewee 3, December 6, 2010.

¹⁵ Anonymous interviewee 19, November 29, 2010.

that were pushing for changes in food aid policies of Northern states to mitigate the growing food insecurity experienced by much of the world's poor.¹⁶

Once it was decided that agriculture was to become a stand-alone program, Rajiv Shah was moved over from the Global Health Program to oversee it. A medical graduate with an MBA who began at BMGF in 2001, Shah's only experience up until that point had been in coordinating some of the partnerships and funding mechanisms developed by the health program. BMGF leadership however thought that such experience would be useful in agriculture, and Shah became the first full time employee of the Foundation's Global Development Program, which was officially established in 2006 with agriculture as its first focus area.¹⁷ Its material impact was felt immediately, however, for as noted by Herdt, in its first three years, its agriculture grant-making averaged just under US\$350 million per annum.¹⁸

The same general decision-making process that came to inform the Global Health Program's focus, during the tenure of Tachi Yamada,¹⁹ was used to guide the foundation's agricultural development efforts. BMGF staff determined that the greatest needs lay in impoverished rural regions of Sub-Saharan Africa and South-East Asia where various factors (e.g. lack of technology and access to inputs markets or inappropriate policies) were contributing to poor agricultural productivity. Based on its assessments, the foundation established country-specific priorities where it chose to concentrate its efforts, with the general focus being on increasing agricultural productivity as a means of jump-starting economic productivity in these regions.²⁰

¹⁶ Anonymous interviewee 28, July 6, 2011.

¹⁷ Anonymous interviewee 3, December 6, 2010.

¹⁸ Herdt, "People, Institutions, and Technology."

¹⁹ See page 9 to 10 of Chapter 6.

²⁰ Anonymous interviewee 30 July 20, 2011.

7.11 AGRA: Enabling RF's Plans for Agricultural Development in Sub-Saharan Africa

The program's first major grant was US\$100 million for the launch of the AGRA, an example of private diplomacy to which RF also contributed US\$50 million. As noted by Robert Paarlberg, this joint venture in many ways represented the beginning of the end of RF's agricultural program and the emergence of BMGF as a game changing organization in global agricultural development, which individuals long associated with RF helped facilitate.²¹ While RF had spent almost US\$150 million on agricultural development within Africa during the tenure of Gordon Conway,²² Judith Rodin—who succeeded Conway in 2005—expressed little interest in maintaining the Foundation's agricultural programs. However, through the AGRA grant, BMGF unexpectedly injected new life into RF's plans for agricultural modernization in Africa.²³

While established as an independent entity, AGRA was effectively an expansion of a pre-existing RF program in Western Kenya which focused on working with banks to facilitate loans for small holder farmers to improve their access to seeds and fertilizers, and developing and training a network of seed and agro-extension dealers. Since its senior staff initially consisted of seconded RF employees such as Gary Toenniessen, Joseph DeVries, and Akin Adessina, the organization served to broaden an approach that RF had been utilizing on a much smaller scale.²⁴

As an institution, AGRA seeks to catalyze efforts to fill two major gaps perceived by its architects to be impeding agricultural productivity across much of Sub-Saharan Africa, which include (i) the lack of the lack of local indigenous private sectors creating and distributing new seed varieties and associated inputs for African farmers and (ii) the longstanding apathy towards agriculture as a vessel for economic development displayed by Northern donors and African governments alike.²⁵

²¹ Robert Paarlberg, *Starved For Science: How Biotechnology Is Being Kept Out of Africa* (Cambridge: Harvard University Press, 2008), 107.

²² Ibid.

²³ Anonymous interviewee 22, November 12, 2010; Anonymous interviewee 19, November 29, 2010.

²⁴ Anonymous interviewee 21, February 8, 2011.

²⁵ Anonymous interviewee 18, February 10, 2011.

The lack of indigenous seed companies are viewed by AGRA leaders as a crucial impediment to healthy agricultural sectors, for as previously noted, transnational seed companies have long ignored varieties of importance for smallholders in much of the developing world, given the limited profit margins, and have instead focused on tradable commodities. This is not a surprise, as firms are expected to focus on where there is commercial demand and a good return on their investment. Yet as noted by former AGRA Vice-President Akinwumi (Akin) Adesina, also a former RF staff member who is currently Minister of Agriculture in the Nigerian government, shareholder-needs do little for the tens of millions of African smallholders with limited ability to pay for seeds and inputs, who themselves are catering to very unique consumer preferences while facing a variety of environmental challenges including but not limited to drought, flooding, disease and pests.²⁶

AGRA considers commercial breeders' disinterest in developing new varieties for African growers to be a clear case of market failure and is taking a three-pronged approach to address it. First, the organization is spearheading human and physical capacity building efforts by providing funding and coordinating the training of plant scientists in the tools of biotechnology, ensuring the availability of physical labs and developing networks linking Southern and Northern scientists. Second, working with the African Agricultural Technology Foundation (AATF), it is helping to facilitate the transplantation of the requisite proprietary technology via the provision of licenses for African applications, and developing the necessary regulatory biosafety frameworks to govern the flow of materials to look at critical risks. Finally, it is working with farmers to ensure that biotechnology provides sufficient value added compared to traditional varieties to justify their adoption. This means demonstrating a higher nutritive value in the case of varieties that have undergone biofortification, or showing increased resistance to the diseases, pests, drought and flooding that threaten harvests every year, and which will likely only get worse with climate change.²⁷

Profitable indigenous seed industries are perceived by AGRA as essential for ensuring that access to a broad spectrum of crops remain available to African farmers for cultivation. Indeed local firms have considerable potential to profit where transnational corporations

²⁶ Interview with Akin Adesina, February 10, 2011.

²⁷ Ibid.

cannot. Trade rules related to quality and food safety established by the United States and EU are in place for established crops (e.g. cocoa, bananas etc.), which limit the potential for African small holders to profit from their export. However indigenous varieties are often not subject to these rules, meaning that opportunities exist in global markets for those willing to invest in untapped varieties.²⁸ Accordingly, the products that AGRA is taking to the improvement phases are from local germ plasm and consumed locally, such as sweet potatoes and yams, sorghum, and cow peas, which are being crossed with exotics to incorporate desired traits.²⁹

Yet AGRA's architects see the success of the adoption of improved indigenous varieties being contingent on what they view as another pressing gap being filled, that being ensuring smallholder farmers have access to chemical fertilizer. While African smallholders have limited and often no access to either herbicide or fertilizer, a lack of access to the latter has resulted in nutrient depletion, which combined with wood being used as a principal fuel source of cooking fuel has in turn driven widespread destruction of forests at a rate of two hundred percent greater than the global average. The resulting loss of soil nutrients is costing African governments an estimated US\$4.5 billion per year and increasing the use of chemical fertilizer has been deemed by international donors such as the World Bank as fundamental to addressing this deficiency.³⁰ In 2006 Adesina personally led the Africa Fertilizer Summit at which attending heads of state agreed to increase fertilizer application rates from 8 to 50 kg/hectare.³¹

While still half of the global average of 100kg/hectare, this increase termed "micro-building," translates into smallholders now being in the position to devote a single bottle-cap of fertilizer per plant, where previously none was applied. Geographical Information Systems (GIS) are also being employed to improve knowledge on the state of soils in a given area, such what type and how much fertilizer is needed, which will improve guidelines for fertilizer use in different regions. Moreover, while organics alone are deemed insufficient to

²⁸ Anonymous interviewee 24, January 26, 2011.

²⁹ Anonymous interviewee 18, February 10, 2011.

³⁰ Michael Morris and Valerie A. Kelly, Ron J. Kopicki, and Derek Byerlee, *Fertilizer Use in African Agriculture: Lessons Learned and Good Practice Guidelines* (Washington: The World Bank, 2007).

³¹ Anonymous interviewee 18, February 10, 2011.

solve Africa's soil nutrient deficiencies, chemical fertilizers are being combined with organic matter, such as herbaceous legumes and animal manure with the hope of augmenting the effect of the former, and studies are being conducted on the efficacy these practices.³²

AGRA, according to Adesina, is not merely attempting to transplant the Asian experience in Africa as some critics have suggested,³³ for the organization seeks to avoid the adverse effects to biodiversity brought about by focusing on a few key crops demanding increased irrigation and substantial chemical inputs. By advocating practices such as intercropping and a general breadbasket approach so that there will always be a mix of crops grown in a single given area, AGRA is framing itself as a facilitator of agro-ecological based breeding that is specifically tailored to African needs.³⁴

This self-characterization is however very much contested. A coalition of African Civil Society Organizations (CSOs) have, for example, publicly expressed the view that the organization is little more than a vehicle for creating smallholder dependency on MNCs for the provision of hybrid seeds, chemical inputs, and in the long-term, genetically modified organisms, which are viewed as a threat to indigenous biodiversity.³⁵ Raj Patel reinforces this perspective in his argument that while framed as a philanthropic venture, the new Green Revolution is in essence about employing tools of American hegemony in an attempt to control the commodification of African agriculture.³⁶

Activists, including Patel, associated with the transnational food sovereignty movement have argued that AGRA and its enablers are perpetuating the false premise that hunger in Africa is the result of a lack of technology,³⁷ and integration with global markets.³⁸

³² Anonymous interviewee 18, February 10, 2011.

³³ Eric Holt-Gimenez, Miguel A. Altieri, and Peter Rosset, "Ten Reasons Why the Rockefeller and the Bill and Melinda Gates Foundation's Alliance for Another Green Revolution Will Not Solve the Problems of Poverty and Hunger in Sub-Saharan Africa," *Food First Policy Brief* no. 12 (October 2006): 1-11.

³⁴ Interview with Akin Adesina, February 10, 2011.

³⁵ "Africa's Wealth of Seed Diversity and Farmer Knowledge—Under threat from the Gates/ Rockefeller 'Green Revolution,'" (Initiative Statement from African Civil Society Organisations, World Social Forum, Kenya, January 25, 2007).

³⁶ Raj Patel, "The Long Green Revolution," *The Journal of Peasant Studies* 40 no. 1 (2013): 43.

³⁷ Raj Patel, Eric Holt-Gimenez, and Annie Shattuck, "Ending Africa's Hunger," *The Nation* (September 21, 2009), accessed November 23, 2009, <http://www.thenation.com/doc/20090921>

³⁸ Eric Holt-Gimenez, "Out of AGRA: The Green Revolution Returns to Africa," *Development* 51, no. 4 (2008): 1, 6.

This, such critics charge, serves to distract from larger structural impediments to hunger, such as externally imposed trade rules demanding the export of needed food crops, and austerity measures which have dramatically weakened African countries capacities to engage in agricultural research and development.³⁹

To back their claims, such critics point to the findings of the International Assessment of Agricultural Knowledge Science and Technology for Development (IAASTD), a three-year multi-disciplinary study, which drew on the expertise of nearly 1000 scientists and development experts. Initiated by the World Bank, and co-sponsored by multiple UN agencies, IAASTD sought to assess “*the relevance, quality and effectiveness of agricultural knowledge, science, and technology (AKST) [and the] effectiveness of public and private sector policies as well as institutional arrangements in relation to AKST [emphasis added].*”⁴⁰

IAASTD concluded that the dominant industrial agricultural model is both ecological and social unsustainable. Like AGRA, it also endorsed the practice of using agro-ecological techniques, building local economies, ensuring local control of seeds, and creating farmer-led participatory breeding programs. Where IAASTD departs from AGRA is in its expressed reservation over the utility of advanced technology, and particularly biotechnology and its willingness to explicitly call for governments to enact land reforms and make changes to the rules governing intellectual property for the benefit of smallholder farmers. As noted by Jennifer Clapp, these conclusions were deemed sufficiently unpalatable to Canada, Australia and the United States; they did not endorse the final report and were the reason why the agricultural biotechnology industry association, CropLife, removed itself from the process prior to the report’s release.⁴¹

For critics, AGRA’s unwillingness to challenge such structural impediments to agricultural development make it and BMGF as its principal enabler impediments to transformative change. AGRA is, viewed from this perspective, a counter-epistemic community offering explanations and policy prescriptions for the problems under scrutiny, which differ radically

³⁹ Patel, Holt-Gimenez, and Shattuck.

⁴⁰ International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), *Agriculture at a Crossroads* (Washington: Island Press, 2008).

⁴¹ Jennifer Clapp, “The Global Food Crisis and International Agricultural Policy: Which Way Forward?” *Global Governance* 15 (2009): 302.

from the majority of global experts.⁴² The only explanation for AGRA having policy influence from the perspective of its critics is that its strategies do not place it in conflict with those firms and Northern states benefiting from existing structural impediments to progressive agricultural development.

Admittedly, there is a big difference between RF-driven health-related Public-Private Partnerships (PPPs) focused on product development and AGRA. In the mid to late 1990s, the main question for those within RF's health program was how to get vaccines and drugs for neglected diseases developed while cutting down on the costs, and Product Development Partnerships (PDPs) served to address these concerns. AGRA leaders concede that agricultural development is totally different in that it is not about products but about long-term structural change. The productivity, for example,⁴³ of Sub-Saharan African agriculture has been declining for three decades and the continent continues to be a net importer of food.⁴⁴ To reverse this trend, there is a need to work at different levels concurrently.⁴⁵

The architects and leaders of AGRA readily acknowledge that there will be no silver bullet to the continent's agricultural woes. Consequently, they see the organization first and foremost as a catalyst for reversing the longstanding lack of both regional and global dialogue between public, private and civil society actors related to strengthening African agricultural sectors, which they suggest is evident in their success in bringing together those players who need to be at the policy-making table.

AGRA partners with many international development institutions including the International Fund for Agricultural Development (IFAD), World Bank, FAO and the WFP, as well as with Northern development agencies such as the United States Agency for International Development (USAID), Department for International Development (DFID), and multi-lateral development banks. However, it also partners with African organizations, from national governments to regional economic organizations, to local community organizations and the private sector. All of these partnerships are deemed critical because AGRA plans

⁴² Jeremy Youde, *AIDS, South Africa and the Politics of Knowledge* (Aldershot: Ashgate Publishing Ltd., 2007), 4.

⁴³ Productivity defined here as output per unit of input.

⁴⁴ Lilyan E. Fulginiti, Richard K. Perrin, and Bingxin Yu, "Institutions and Agricultural Productivity in Sub-Saharan Africa," *Agricultural Economics* 21, no.2-3 (2004): 169-180.

⁴⁵ Anonymous interviewee 18, February 10, 2011.

requires others to do the work and as such the organization is critically mindful of being just one player in a sea of critical partners.⁴⁶

Historically, for example, Africa's domestic financial sector has been excluded from agricultural planning, which explains in part why less than one percent of commercial financing in Africa is agriculture-related, despite that fact that agriculture-related activities account for forty to fifty percent of the GDP and seventy to eighty percent of employment. The African Green Revolution Forum (AGRF) is a platform for engaging multiple players, including those from the private sector to determine the best policies, instruments and investments needed for bringing AGRA plans to scale, as well as what, where and how to measure effectiveness. It is assumed by AGRA leadership that attaining robust data related to fertilizers, seeds, finance, policy, and infrastructure will demonstrate to CEOs, scholars and African heads of state what is working and what is not.⁴⁷

While the International Rice Research Institute (IRRI) and the International Centre for the Improvement of Corn and Wheat (CIMMYT) created the products that drove the Green Revolution, it would never have occurred without governments in Asia making huge investments in infrastructure. It is true that structural adjustment killed any gains made in agricultural development in Africa in the post-colonial period.⁴⁸ Yet it is also true that the investments made by countries such as China and India on roads and irrigation were not replicated by African governments.⁴⁹ Historically and continuing today, smallholders in Sub-Saharan Africa have relied upon rain-fed irrigation. Indeed less than five percent of cultivated land in Africa is irrigated through artificial means.⁵⁰ Yet seasonal dry spells in semi-arid/arid zones such as the Sahel create vulnerabilities for smallholders, which may be overcome without costly interventions (i.e. collecting rainwater in small ponds during

⁴⁶ Anonymous interviewee 18, February 10, 2011.

⁴⁷ Anonymous interviewee Ibid.

⁴⁸ See for example Deborah Fahy Bryceson, "The Scramble in Africa: Reorienting Rural Livelihoods," *World Development* 30, no. 5 (2002): 725-739; see also Jean M. Due and Christina A. Gladwin, "Impacts of Structural Adjustment Programs on African Women Farmers and Female-Headed Households," *American Journal of Agricultural Economics* 73, no. 5 (1991): 1431-1439.

⁴⁹ Anonymous interviewee 18, February 10, 2011.

⁵⁰ Suhas Pralhad Wani, Johan Rockström, and Theib Yousef Oweis, *Rainfed Agriculture: Unlocking the Potential* (Cambridge: CABI International, 2009), 184.

growing season).⁵¹ However droughts, which are projected to be exacerbated by climate change,⁵² present a more serious risk to the long-term viability of agriculture in such arid climates and give weight to calls for greater state investment in more complex irrigation schemes.⁵³

Adesina uses the example of a lack of irrigation technology to make the larger and well established point that for decades governments, African governments have taken their rural populations for granted by demanding taxation without providing the infrastructure agricultural sectors need to thrive.⁵⁴ A lack of investment in such infrastructure, argues Adesina, is one important cause of the rural poverty and rural to urban migration that has been occurring for over four decades,⁵⁵ and is creating tremendous strains on government coffers and municipal services. AGRA leadership readily acknowledges the pressure for greater political accountability on this issue, which comes from the rise of civil society,⁵⁶ growing democracy, and the concept of food as a human right,⁵⁷ thus sharing with activists an unwillingness to see Africa persist as, in the words of Adesina, “a museum of poverty.”⁵⁸ Supporting farmers’ access to technology and overall capacity building in agricultural development has proven to be an effective strategy to counteract this process.⁵⁹ Consequently, AGRA’s most important function has become that of convener of political commitments to strengthening agriculture within Africa itself.

⁵¹ Patrick Fox and Johan Rockström, “Water-Harvesting for Supplementary Irrigation of Cereal Crops to Overcome Intra-Seasonal Dry-Spells in the Sahel,” *Physics and Chemistry of the Earth (B)* 25, no. 3 (2000): 289-296.

⁵² Henry N. Le Hou’erou, “Climate Change, Drought and Desertification,” *Journal of Arid Environments* 34 (1996): 133–185.

⁵³ See for example Melvyn Kay, *Smallholder Irrigation Technology: Prospects For Sub-Saharan Africa* (Rome: Food and Agricultural Organization of the United Nations, 2001).

⁵⁴ Interview with Akin Adesina, February 10, 2011; Kevin M. Cleaver and Graeme W. Donovan, “Agriculture, Poverty and Policy Reform in Sub-Saharan Africa,” *World Bank Discussion Paper* 280 (Washington: The World Bank, 1995), 16.

⁵⁵ Interview with Akin Adesina, February 10, 2011; See for example Derek Byerlee, “Rural-Urban Migration in Africa: Theory, Policy and Research Implications,” *International Migration Review* 8, no. 4 (1974), 543-566.

⁵⁶ See for example Shantayanan Devarajan, Stuti Khemani, and Michael Walton, “Civil Society, Public Action and Accountability in Africa,” *HKS Faculty Research Working Paper Series* (Cambridge MA: John F. Kennedy School of Government, Harvard University, 2011).

⁵⁷ See for example Kerstin Mechlem, “Food Security and the Right to Food in the Discourse of the United Nations,” *European Law Journal* 10, no. 5 (2004): 631–648; see also Sharon Groenmeyer, “The Right to Food Sovereignty for Small Scale Farmers: Case Study of Farming Cooperatives in Limpopo Province, South Africa.” *International Journal of Social Science Studies* 1, no.2 (2013): 1-13

⁵⁸ Interview with Akin Adesina, February 10, 2011.

⁵⁹ See for example T.A. Asfaha and Andre Jooste, “The Agricultural Input Elasticity of Rural-Urban Migration in South Africa,” *Agrekon* 45, no. 1 (2006): 89-105.

Both Steven Radelet and Colestus Juma have made the case that effective agriculture sectors in Sub-Saharan Africa are the product first and foremost of strong states,⁶⁰ and that a widespread agricultural revolution in Africa is contingent on political leadership, inter- and intra-governmental cooperation and continuity of governance to assure that the necessary agricultural infrastructure (e.g. irrigation, roads, sources of energy) are in place. Enthusiasm over micro-credit schemes modeled on the Grameen bank, for example,⁶¹ oriented at getting needed capital to individuals who would otherwise not qualify for loans has waned in the face of evidence undermining such claims.⁶² Proponents of AGRA are of the view that for smallholder farmers, it is more important to have secure financial services in a more general way (e.g. bank accounts and full credit lines) to ensure payment for inputs and machinery but this will require the backing of government.⁶³

Moreover, AGRA proponents believe the role of African governments in the development of local agricultural private sectors will come through adherence to certain general principles such as maintaining political stability, offering tax subsidies to firms willing to develop new crop varieties for local farmers, and most importantly, ensuring demand for such products through the establishment of venture capital funds.⁶⁴ Furthermore, through interstate cooperation, AGRA leadership are convinced that regional markets will ensure the demand is of sufficient scale. A key role of AGRA therefore is to catalyze indigenous private sector growth focused on developing crop varieties for local markets.

Proponents of AGRA see the role of government in the revitalization of African agricultural sectors as being creators of the regulatory frameworks and regional institutions deemed necessary for support this growth, so as to ensure that a whole value chain is in place before firms are asked to make capital investments.⁶⁵ According to Catherine Bertini, this strategy

⁶⁰ Steven Radelet, *Emerging Africa: How 17 Countries Are Leading the Way*, Washington: Center for Global Development, 2010; Colestus Juma, *The New Harvest: Agricultural Innovation in Africa* (New York: Oxford University Press, 2011).

⁶¹ David Bornstein, *The Price of a Dream: The Story of the Grameen Bank and the Idea That Is Helping the Poor to Change Their Lives* (Chicago: University of Chicago Press, 1997).

⁶² See for example Josephine Lairap-Fonderson, "The Disciplinary Power of Micro Credit: Examples From Kenya and Cameroon," in *Rethinking Empowerment, Gender and Development in a Global/Local World*, eds., Jane L. Parpart, Shirin Rai, and Kathleen A. Staudt (London; New York: Routledge, 2003), 182-198.

⁶³ Anonymous interviewee 31, November 22, 2010.

⁶⁴ Anonymous interviewee 23, February 3, 2011.

⁶⁵ Anonymous interviewee 23, February 3, 2011.

should be encouraged on the grounds that building indigenous private sectors adds considerable value to any economy, for when processing is done locally, more jobs are created and the end product commands a higher price.⁶⁶

As RF decades of country-level epistemic expansions served to illustrate, political support is critical for building national capacity for innovation in science and technology. Not only can government policy create an investment climate that encourages research in science, it can also provide incentives to university scientists to focus more on applied research as opposed to basic science or teaching.⁶⁷ Yet, even when political support for SEI is weak, through non-interference, private sectors can still function as illustrated by Kenya's thriving horticulture sector.⁶⁸ From the perspective of Bertini, there is growing sentiment among supporters of AGRA that it will have to be the private sector that drives such political support for a new Green Revolution. This is because popular political support and political power across Sub-Saharan Africa is typically concentrated in urban areas, which is why agricultural ministries, whose focus is on rural areas, have historically had limited influence over broader government policy trajectories.⁶⁹

Perhaps the most daunting challenge for AGRA is that Africa is an incredibly heterogeneous continent, politically, ecologically and biologically in terms of the varieties of importance and the fact that this diversity means that many different ideas will have to be attempted. One strategy AGRA has strongly promoted in pursuit of policy cohesion is the development of regional crop belts or corridors (i.e. for maize, sorghum etc.). Regional crop belts are seen as promising because of the economics of scale on production and opportunity to cater to larger markets, which through sharing reduce the cost-burden of developing public capacity to develop needed technology such as the infrastructure supporting cell phones. These larger structural changes are deemed by African Harvest Biotech Foundation International's founding director and CEO Florence Wambugu, to be critical for broadening economic

⁶⁶ Interview with Catherine Bertini, January 26, 2011.

⁶⁷ Bengt-Ake, Lundvall and Susana Borrás, "Science, Technology and Innovation Policy," in *The Oxford Handbook of Innovation*, eds., by Jan Fagerberg, David C. Mowery, and Richard R. Nelson (Oxford: Oxford University Press, 2005): 599-631.

⁶⁸ Anonymous interviewee 11, January 20, 2011; see also Nicholas Minot and Margaret Ngiigi, "Are Horticultural Exports a Replicable Success Story? Evidence from Kenya and Côte d'Ivoire," *EPTD Discussion Paper* no. 120/*MTID Discussion Paper* no. 73 (Washington: International Food Policy Research Institute, 2004).

⁶⁹ Interview with Catherine Bertini, January 26, 2011.

opportunities for Africa's smallholders. For Wambugu, the cell phone revolution occurring in Sub-Saharan Africa illustrates this well, for it is changing the way people communicate and conduct business by giving new communications tools to those historically without any modern communications equipment.⁷⁰

Informed by RF experience but enabled by BMGF money, AGRA is working to realize the creation of new technologies reflective of diverse ecological conditions and taking into consideration past practices by farmers, which it ultimately intends to see developed by local organizations—whether private or public. To ensure African countries have sufficient expertise to undertake this, R&D and the AGRA is helping to rebuild faculties of agriculture at Africa's universities, while at the same time developing a new generation of seed sellers at the local level by helping small “mom and pop” retailers transition from selling products such as soft drinks to agro-products through retraining. However the degree to which states remain committed to AGRA's vision is viewed as the most important factor underpinning its success. Accordingly AGRA leaders see the organization's most critical role as creating political leverage for what they deem to be positive political change. In this regard, it has encountered receptivity for its ideas within governments, illustrated by the fact that the African Development Bank is now building roads, irrigation, and warehouses, and AGRA and International Organizations (IOs) such as the International Fund for Agricultural Development (IFAD) are currently working with governments such as Nigeria to secure hundreds of millions of dollars for in-country projects focused on smallholders, while leveraging billions more from private banks and donor governments for the same purpose.⁷¹

Consistent with the CGIAR system, AGRA engagement is a long-term strategy, as it is assumed by AGRA staff, it will take many years to fulfill its goals and only if all partners pull their weight. The organization's strategies were devised by members of an epistemic community which the foundation has sought guidance from and provides material support to. Indeed AGRA is a clear example that private diplomacy can foster institutional frameworks capable of providing public goods to vulnerable populations in developing countries when public sector authorities mandated to fill this role have been unable to do so.

⁷⁰ Interview with Florence Wambugu, February 3, 2011.

⁷¹ Anonymous interviewee 18, February 10, 2011.

BMGF's contribution to enact what it considers to be meaningful structural change in agricultural development in Africa has thus been to enable AGRA, which is effectively engaging multiple levels of governance concurrently in pursuit of its aforementioned goals.⁷²

7.2 Beyond the Alliance for a Green Revolution in Africa: Comparing the Rockefeller and Gates Foundation's Agricultural Programs

7.21 A common commitment to science-enabled innovation

AGRA is an independent entity modeled on a RF vision for agricultural development in Africa, which BMGF played a critical role in seeing realized. Yet is the same multi-faceted approach informing AGRA also informing BMGF's own agricultural program? A survey of the Global Development Program's grant making shows its grantees—whether individual International Agricultural Research Centres (IARCs), universities, other Foundations, or CSOs—are by no means a homogenous lot.⁷³

However while the Foundation may be willing to invest in initiatives ranging from organic farming to genetically modified crops in pursuit of innovation and results,⁷⁴ its critics say the distribution of this funding reveals a preference towards creating access to new advanced technologies (e.g. chilling centres for dairy farmers) intended to increase market access and overall profit,⁷⁵ at the expense of low-cost and comparatively simple technologies, techniques and strategies for improving overall productivity, and the long-term food security for rural populations.⁷⁶ In the eyes of critics, this preference for advanced technology demonstrates that the Foundation remains informed by the erroneous assumption that if it primes the technology pump enough, solutions will present themselves.⁷⁷

⁷² Anonymous interviewee 31, November 22, 2010.

⁷³ BMGF, *Agricultural Development Strategy Overview* (September 2010), accessed April 15, 2013, <http://www.gatesFoundation.org/What-We-Do/Global-Development/Agricultural-Development>

⁷⁴ Anonymous interviewee 21, February 8, 2011.

⁷⁵ Nicole Wallace, "Gates Foundation Unveils \$306-Million in Agricultural Grants," *Chronicle of Philanthropy* (January 25, 2008), accessed July 29, 2010, <http://philanthropy.com/news/updates/3831/gates-foundation-unveils-306-million-in-agricultural-grants>

⁷⁶ Tom Philpott, "Worldwatch Gets 1.3 Million Grant from Gates Foundation to Look at Sustainable Ag in Africa," *Grist* (July 10, 2009), accessed January 17, 2010, <http://www.grist.org/article/2009-07-10-worldwatch-gates-africa-agriculture>

⁷⁷ Anonymous interviewee 22, November 12, 2010.

It is true that Bill Gates has been a vocal supporter of the idea that biotechnology and particularly GE is a necessary tool for alleviating global hunger.⁷⁸ Indeed BMGF is proving to be an important driver of PDPs focused on developing new transgenic cultivars such as drought tolerant maize intended for distribution in Africa.⁷⁹ An example of such an agricultural PDP is the Water Efficient Maize for Africa (WEMA) project, a partnership involving Monsanto, AATF, BMGF, CYMMIT and the national agricultural research systems of Kenya, Mozambique, South Africa, Tanzania, and Uganda, geared towards developing drought-tolerant maize varieties for use in Sub-Saharan Africa.⁸⁰ RF in contrast has never taken the position that GE will be integral to African countries meeting their food needs or alleviating poverty, and AGRA was not set up to fund GE projects. Having said that, RF has always seen advanced technology such as GE being one piece of a much larger puzzle. While drought tolerant varieties produced through CIMMYT with conventional techniques are showing great promise,⁸¹ the appeal of genetic modification for desired traits that may be universal lies in the potential of applying said trait once it is developed to many different crops.⁸²

Proponents of BMGF's support of GE such as Robert Paarlberg see resistance to its application in agricultural development as a phenomenon driven by EU-based environmental NGOs,⁸³ which is based on what he believes to be two erroneous assumptions. The first is that genetically modified food creates unacceptable health risks,⁸⁴ which its defenders say have not substantiated with evidence of adverse effects,⁸⁵ despite

⁷⁸ Bill Gates, "We Need Productivity and Sustainability," *BMGF Blog* (January 24, 2010), accessed Month Day, Year, <http://www.gatesFoundation.org/Foundationnotes/Pages/poor-farmers-productivity-sustainability.aspx>

⁷⁹ Monsanto and AATF, "Combing Breeding and Biotechnology to Develop Drought Tolerant Maize: A Proposal to the Bill and Melinda Gates Foundation," (submitted by Monsanto Company and the African Agricultural Technology Foundation, St Louis, May 25, 2007).

⁸⁰ *Ibid.*

⁸¹ M. Bänziger and O. Diallo, "Progress in Developing Drought and n Tolerant Maize Cultivars for Eastern and Southern Africa," in *Integrated Approaches to Higher Maize Productivity in the New Millenium*, eds., D.K. Friesen, and A.F.E. Palmer (Nairobi: Proceedings of the Seventh Eastern and Southern Africa Regional Maize Conference, 2002), 189-194.

⁸² Anonymous interviewee 31, November 22, 2010.

⁸³ Paarlberg, *Starved For Science*.

⁸⁴ See for example Julie A. Nordlee, Steve L. Taylor, Jeffrey A. Townsend, Laurie A. Thomas, and Robert K. Bush, "Identification of a Brazil-Nut Allergen in Transgenic Soybeans," *N Engl J Med* 334 (1996): 688-692; Stanley W. Ewen and Arpad Pusztai, "Effect of Diets Containing Genetically Modified Potatoes Expressing *Galanthus nivalis* lectin on Rat Small Intestine," *Lancet* 354, no. 9187 (1999): 1353-54.

⁸⁵ See for example Nina Fedoroff, *Mendel in the Kitchen: A Scientist's View of Genetically Modified Foods* (Washington, D.C.: National Academy Press, 2004).

millions of Americans consuming this food for over a decade.⁸⁶ The second is that through mergers and acquisitions, transnational corporations such as a Monsanto are seeking global control over development and dissemination of proprietary technologies.⁸⁷ The paradox of such opposition, say allies of BMGF, is that GE currently under development for African environments with the support of firms including Monsanto is targeting food crops that are consumed locally and rarely exported to countries outside of Africa.⁸⁸ Paarlberg asserts that resistance to African farmer's acceptance of GM crops originated in Europe because the continent continues to be the largest export market for African farmers.⁸⁹ From Paarlberg's vantage-point, therefore, European civil society's resistance to the planting and consumption of GM crops, while framed as a health concern, must be seen as efforts to protect the European agricultural sector.⁹⁰ Yet this argument does not diminish the very real possibility of MNCs such as Monsanto attaining national or even regional monopolies on seeds developed for smallholder production and consumption within Africa once profit-potential has been demonstrated. Indeed this could inadvertently occur via the acquisition of the small local start-ups AGRA is seeking to cultivate.

Transgenic crops are an interesting example of an issue that seems to divide scientists along disciplinary lines. This is because their views on the subject of inquiry are informed in large part by the epistemic filters that characterize the disciplines they have traditionally originated from molecular biology and ecology.⁹¹ Historically, those expressing reservations of purposefully introducing organisms into the world that have not been shaped by natural selection—thus departing from the central tenant of the evolutionary process - decent through modification⁹²—have been ecologists, who as a group are associated with the concept of disequilibria characterizing ecosystems.⁹³

⁸⁶ Anonymous interviewee 23, February 3, 2011.

⁸⁷ See for example Luis Suarez-Villa, *Globalization and Technocapitalism: The Political Economy of Corporate Power and Technological Domination* (London: Ashgate, 2012).

⁸⁸ Anonymous interviewee 23, February 3, 2011.

⁸⁹ Paarlberg, *Starved For Science*.

⁹⁰ Anonymous interviewee 23 February 3, 2011.

⁹¹ M.S. Carolan, "The Multidimensionality of Environmental Problems: The GMO Controversy and the Limits of Scientific Materialism," *Environmental Values* 17, no. 1 (2008): 67-82.

⁹² C.J. Preston, "Synthetic Biology: Drawing a Line in Darwin's Sand," *Environmental Values* 17, no. 1 (2008): 23-39.

⁹³ See for example Sven Jorgensen, Bernard Patten, and Milan Straskraba, "Ecosystems Emerging: Toward an Ecology of Complex Systems in a Complex Future," *Ecological Modeling* 62 (1992): 1-27.

In contrast GE's chief proponents have been largely molecular biologists, who have espoused narratives of predictability to gain public support for their innovations.⁹⁴ The general argument made by proponents of GE is that because there is nothing intrinsic about a gene, the distinction between the synthetic and the natural cannot be made on genetic grounds. Continuing with this logic is that it is fundamentally inconsistent to label organisms with synthetically structured DNA as unnatural, if organisms containing genetic material that would never have mixed without human manipulation (i.e. cross-breeding the application of Mendelian genetics) are considered natural entities. At the end of the day, for GE's proponents, the products of rDNA technology, specifically transgenic cultivars, are self-replicating organisms interacting with other species in their respective environments, and as such are subject to evolutionary pressures and will invariably change accordingly.⁹⁵

GE in agricultural development is a polarizing issue, which a lack of understanding of molecular biology, genetics and plant breeding processes appears to augment. However, such polarization is also driven by a well-founded distrust in the distribution of benefits associated with biotechnology in general, and many uncertainties over the long-term ecological and health impacts of transgenic crops. And yet, the fact that these debates related to one type of agricultural technology remain unresolved does not diminish the fact that technology as a whole has been and continues to be essential both on the farm (e.g. seed varieties) and off farm (e.g. storage and processing). According to one long-time former USAID official, the value added will be much less, as will the ability to meet distant markets if technological know-how is lacking,⁹⁶ which makes BMGF continuation of RF's tradition of SEI wholly relevant to smallholder farmers and governments alike.

In theory, the best reason to advocate for policy change is having something in hand that can clearly demonstrate a significant impact if the changes one is advocating are adopted.⁹⁷

IRRI Executive Director Robert Zeigler argues that the Green Revolution would not have

⁹⁴ S. McAfee, "Neoliberalism on the Molecular Scale: Economic and Genetic Reductionism in Biotechnology Battles," *Geoforum* 34, no. 2 (2003): 203-19; S. Flothman and J. van Aken, "Of Maize and Men: Is the Endorsement of GM Crops Science or Politics?" *European Journal of Molecular Biology Organization* 2, no. 8 (2001): 644-647.

⁹⁵ Fedoroff.

⁹⁶ Anonymous interviewee 32, December 3, 2010.

⁹⁷ Ian Sanderson, "Evaluation, Policy Learning and Evidence-Based Policy Making," *Public Administration* 80, no. 1 (2002): 1-22.

been undertaken by participating governments without the evidence presented by RF and their partners, which demonstrated increases in yields generated by the adoption of the new varieties. The reason for this, says Zeigler, was that the success of the high-yielding rice and wheat and varieties was contingent on governments making huge investment in fertilizers and extension systems to ensure a proven return on their investment.⁹⁸ This was demonstrated again in 2011 when India changed its seed laws, for example,⁹⁹ in order to facilitate the rapid dissemination of flood tolerant rice varieties developed for the South Asian context with funding from BMGF after IRRI demonstrated their effectiveness.¹⁰⁰

If a tangible payoff does indeed need to be shown to exist for governments to make substantive policy changes, then this would explain, if not justify, BMGF's chosen focus on investing in new technology today. RF and BMGF certainly have normative goals, but their means to bring about changes in policy has largely been and continue to be through catalyzing SEI and the evidence accrued from it. From the perspective of IRRI's Robert Zeigler, if the Foundation was making theoretical or normative arguments without evidence to substantiate such claims, then this would only serve to undermine its legitimacy in policy arenas.¹⁰¹

BMGF's agricultural program was inspired by RF initiatives in the neo-liberal era, and through AGRA it has demonstrated a commitment to scaling up Rockefeller projects. It has also demonstrated a similar commitment to enabling and showcasing the merits of SEI. This should not be surprising given a cursory look the leadership team currently leading BMGF's agricultural efforts. When Rajiv Shah was appointed administrator of USAID in 2009, Sam Dryden assumed responsibility for the agricultural program. A former entrepreneur and chair of CGIAR private sector committee, Dryden worked collaboratively on an informal, volunteer basis with RF over a 30 year period before coming to work at BMGF and is perceived by independent observers as having always understood the need to juxtapose

⁹⁸ Interviewee with Robert Zeigler, July 12, 2011.

⁹⁹ Elizabeth Kolady Deepthi, David J. Spielman, and Anthony Cavalieri, "The Impact of Seed Policy Reforms and Intellectual Property Rights on Crop Productivity in India," *Journal of Agricultural Economics* 63, no. 2 (2012): 361–384.

¹⁰⁰ Julia Bailey-Serres, Takeshi Fukao, Pamela Ronald, Abdelbagi Ismail, Sigrid Heuer, and David Mackill, "Submergence Tolerant Rice: SUB1's Journey from Landrace to Modern Cultivar," *Rice* 3 (2010): 138–147; Interviewee with Robert Zeigler, July 12, 2011.

¹⁰¹ Ibid.

diverse skills to bring the innovation chain together: the same outlook that has defined RF's approach to facilitating innovation. Former RF protégé Roy Steiner now leads partnership building as Deputy Director at BMGF, while former IRRI and FAO agricultural economist Prabu Pingali is head of the foundation's policy and statistics branch. Moreover, former Monsanto vice-president Rob Horsch, who also participated in most rice biotechnology meetings at RF, is leading BMGF's Research and Development arm.¹⁰²

7.22 Notable Differences

The RF model is evidently well known to BMGF agricultural program. Despite their many similarities, BMGF's agricultural program is nonetheless proving to be a very different animal than that of RF in several important ways that mirror its evolution as an organization in the domain of global health.

7.22-1 Relationships with MNCs

The first is the degree to which it works with industry in pursuit of its goals. This may seem like a contradiction given the efforts that have been made in previous chapters to link RF with the rise to prominence of the PPP paradigm. However for those scrutinizing its efforts, RF has always been clearly distinguishable from the firms with which it has partnered with. The same cannot be said of BMGF, which has faced substantial criticism for recruiting its program officers from agricultural biotech firms.¹⁰³ The appointment of Rob Horsch in particular was seen by many observers as a red flag. Having spent his entire career at Monsanto working in tissue culture, Horsch is believed by connected observers to exhibit a bias for the kinds of big interventions that made Monsanto the immensely profitable company that it is today, yet which work against SEI for the public good by constraining as opposed to increasing access to innovation enabling technologies.¹⁰⁴

¹⁰² Anonymous interviewee 3, December 6, 2010; Anonymous interviewee 19, June 8, 2011.

¹⁰³ See for example Mariam Mayet, "The New Green Revolution in Africa: Trojan Horse for GMOs?" *Can Africa Feed Itself?—Poverty, Agriculture and Environment—Challenges for Africa* (Workshop, Oslo, June 6-9, 2007), 4; see also E.C. Danõ, *Unmasking the New Green Revolution in Africa: Motives, Players and Dynamics* (Penang: Third World Network, Church Development Service (EED), African Centre for Biosafety, 2007), 22-23.

¹⁰⁴ Anonymous interviewee 20, June 8, 2011.

BMGF's tendency of looking to industry for talent is a significant divergence from the Rockefeller approach. This could be construed as BMGF pandering to corporate interests; however the evidence acquired for this project does not support such speculation. Instead the trend of placing those with high-level filling private sector experience within decision-making roles appears to be informed by a belief that cooperation with industry will continue to be instrumental to developing new health and agricultural technologies.

Yet choices of the Foundation's investment arm have only served to reinforce suspicions that its primary allegiances are to firms and market solutions. In September of 2010, it was revealed that BMGF Trust had purchased some US\$ 23 million worth of Monsanto shares. La Via Campesina¹⁰⁵ which claims to represent millions of smallholders around the world¹⁰⁵ accused the foundation of further empowering a company focused on maximizing its profits through aggressive patenting and defense of such patents, while displaying disregard for population health and biosafety in low and middle income countries and limited interest in helping those rural poor seeking to preserve of native seed varieties.¹⁰⁵

Furthermore, following news of the Monsanto investment, it was revealed by the African Centre for Biosafety that BMGF was committing US\$10 million to a project focused on developing Mozambique's soya-value chain in partnership with the agro-food giant Cargill. These investments and a spate of industry hires placing former industry executives in agenda-setting roles prompted *The Guardian* to suggest in a editorial that the Foundation was damaging its reputation by reinforcing concerns that it was setting the stage for corporate takeovers and enabling the expansion of genetically modified crops in Africa.¹⁰⁶

These decisions do raise the question as to whether the investing practices of philanthropies should be guided by the same norms and goals informing their mandates. Up until the end of Gordon Conway's tenure, those managing RF's endowment invested in whatever

¹⁰⁵ La Via Campesina, "La Via Campesina Denounces Gates Foundation Purchases of Monsanto Shares," (September 13, 2010), accessed March 3, 2011, <http://viacampesina.org/en/index.php/actions-and-events-mainmenu-26/stop-transnational-corporations-mainmenu-76/917-la-via-campesina-denounces-gates-foundation-purchase-of-monsanto-company-shares>

¹⁰⁶ The Guardian, "Why Is the Gates Foundation Investing in GM Giant Monsanto?" *The Guardian* (September 29, 2010), accessed February 18, 2011. <http://www.guardian.co.uk/global-development/poverty-matters/2010/sep/29/gates-foundation-gm-monsanto>

provided the best return, with the only restriction being tobacco. While Conway had no role in this, it was decided that a socially responsible investment strategy was not viable, on the grounds that almost every investment could be traced to something opposed to the Foundation's values.¹⁰⁷

The BMGF endowment is also managed by professionals whose compensation depends on their performance relative to the market. Hence they have a strong incentive to maximize profits, even if it may open up the door to criticism. From the vantage-point of former RF Vice-President Herdt, the extent to which condemnation by groups such as La Via Campesina and Food First, which claim to represent the populations the Foundation is aspiring to help, adversely affects BMGF legitimacy and undermine its ability to advance its agenda will depend on how representative of the target population such critics actually are.¹⁰⁸ Proponents of the Foundation see some criticism is inevitable yet feel this will not adversely affect BMGF's legitimacy so long as the Foundation can show that its efforts are having a positive effect;¹⁰⁹ for in the end, it is assumed that the Foundation will be judged on the effectiveness of its ideas like RF before it.¹¹⁰

Nevertheless, the organization's purchase of corporate shares has given substance to critical perceptions. Monsanto's willingness to license some patents at no cost to poor farmers or national centers in low-income countries are, in the opinion of one former RF senior staffer, insufficient reasons for working with the firm because the reputational costs of doing so are considered too large. From this perspective, there is a danger that by partnering with firms whose behavior is historically contradictory to the goal of the partnership, both BMGF's credibility as an enabling institution and wider support for the partnership will be undermined within the development community and the targeted recipient population. The only way this might be justified is if BMGF could use its weight as an investor to shape corporate behavior;¹¹¹ however as Gordon Conway's actions demonstrate, this can still occur without exercising shareholder's rights.

¹⁰⁷ Anonymous interviewee 21, February 8, 2011.

¹⁰⁸ Anonymous interviewee 19, November 29, 2010.

¹⁰⁹ Anonymous interviewee 21, February 8, 2011.

¹¹⁰ Anonymous interviewee 24, January 26, 2011.

¹¹¹ Anonymous interviewee 19, November 29, 2010.

7.22-2 A “Hands On” Style of Grant-making

Mirroring its health program, BMGF’s benefactor style is also very different from that of the RF, whose grant-making decisions were, according to Robert Herdt, never informed by private sector (e.g. McKinsey) advisories. Instead, RF’s approach has been defined by its trust in people and by building networks and network-driven activities via interpersonal relationships: essentially, by taking chances on people.¹¹²

Extending through the rice biotechnology program, RF maintained two types of grants. The first were those that were unrestricted in terms of their application (e.g. granted to the individual IARCs). The second were restricted and time-bound such as those made through the Rice Biotechnology Program. Yet according to IRRI Director General Robert Zeigler, even the restricted grants provided researchers with a high degree of latitude in terms of the actual application of funds and were important sources of funding for innovative research.¹¹³

In contrast, BMGF is an order of magnitude larger than RF in terms of assets and the level of grant making. In 2011, for example, BMGF’s endowment was US\$ 34,640,122,664, and the foundation gave away US\$ 3,239,412,884 in grants. In the same year, RF’s endowment was US\$ 3,507,144,871, from which it granted a total US\$ 132,691,040.¹¹⁴ Zeigler notes that when BMGF was initially established, there was considerable dialogue between the Foundation and RF, and it appeared that BMGF was emulating RF’s approach. Yet the Foundation does not give any unrestricted grants to agriculture and their restricted grants are typically much tighter (in terms of timelines, outputs, reviews and etc.) than those of RF. While BMGF enters into relationships with grantees open to the idea of being long-term beneficiaries of projects, they are still nonetheless very rigorous in their oversight of how funded projects are managed, demanding for example detailed reviews every three years that are quite time consuming for grantees to undertake. From Zeigler’s perspective, such a high degree of rigor is good in that the Foundation’s expectations are clear and “wasteful”

¹¹² Interview with Robert Herdt, November 29, 2010.

¹¹³ Interview with Robert Zeigler, July 12, 2011.

¹¹⁴ The Foundation Centre, “Top 100 U.S. Foundations by Asset Size and Total Giving,” September 2, 2013, accessed September 26, 2013, <http://Foundationcenter.org/findfunders/topfunders/top100assets.html>

spending may be reduced; however having narrowly defined expectations and limited room to deviate from the stated trajectory also eliminates much of the ability of scientists to engage in the lateral thinking that is often critical to innovation. Having said that, Zeigler concedes that the Foundation does support relatively high-risk projects, such as efforts to substantially modify photosynthesis in rice to dramatically improve productivity. This quite basic area of research, he argues, does require adjustment as new discoveries are made and considers the Foundation to have been quite flexible in this regard.¹¹⁵

BMGF's shift towards a matrix scale/bureaucratized approach to grant making is seen by one former RF external advisor and grantee, however, as effectively undermining the kind of personal judgment that still embodies decision-making within RF. From this vantage point, Bill Gates' personal predilection for metrics and particular technological solutions in conjunction with his continued dominant role in the Foundation's management is creating a "group think" mentality that serves merely to reinforce his individual biases.¹¹⁶ Interestingly, the same general criticism was expressed by University of Ottawa aw Professor, Amir Attaran, in 2008 in relation to the Foundation's Global Health program.¹¹⁷

7.22-3 The Ongoing Lack of "Boots On The Ground"

A third important difference between RF and BMGF agricultural programs that has also been noted in its Global Health Program is the decision not to embrace RF's past practice of decentralizing its senior staff. For RF, the Green Revolution was an operational program in that they were managing the actual breeding, research, and training in the countries where they worked. Even when RF's agricultural program was dramatically reduced, the Foundation did establish regional offices in Nairobi and Bangkok where grant-making officers were closer to the projects being funded.¹¹⁸

¹¹⁵ Interview with Robert Zeigler, July 12, 2011.

¹¹⁶ Anonymous interviewee 20, June 8, 2011.

¹¹⁷ Donald G. McNeil, "Gates Foundation's Influence Criticized," *New York Times* (February 16 2008), accessed June 23, 2011. http://www.nytimes.com/2008/02/16/science/16malaria.html?_r=0

¹¹⁸ Anonymous interviewee 3, December 6, 2010.

Initially, Rajiv Shah relied heavily on external consultants (e.g. former RF, WFP and USAID officials and African leaders) who could comment on the trajectory of the Foundation's ideas.¹¹⁹ However giving Shah the reigns of the program in its infancy and its subsequent collaboration with McKinsey was in the eyes of one former RF employee indicative of BMGF leadership initially incorrectly believing that solving agriculture problems could occur without direct agricultural experience. RF in contrast demanded that new hires have proven issue and regional field experience as there was no time for on the job training.¹²⁰

BMGF has largely expected its leadership to live in Seattle. The implications of this expectation according to one former advisor to the Foundation is that not only do their staff have to spend a great percentage of their time on planes, but that a lack of a permanent presence on the ground is limiting opportunities to establish trust with Ministries of Agriculture.¹²¹ African heads of state have publicly committed to devote ten percent of their government's total expenditures to agriculture,¹²² yet some within the development community feel there is a need for BMGF to pay closer attention to issues on the ground and work more closely with national institutions and policy makers, on the premise that there is nothing better than local knowledge to inform development programs.¹²³ Moreover, as noted by Bertini, creating a critical mass in Seattle risks undermining the Foundation's quest for greater employee diversity in the form of international hires, thereby limiting the range of perspectives informing its work.¹²⁴

7.3 BMGF and Political Advocacy in the Governance of Global Agricultural Development

Advocacy is an increasingly important aspect of BMGF work. This section illuminates how the networks of experts BMGF have cultivated for guidance or through grant making affects its influence within national and international policy-making arenas.

¹¹⁹ Anonymous interviewee 24, January 26, 2011.

¹²⁰ Anonymous interviewee 29, November 29, 2010.

¹²¹ Anonymous interviewee 32, December 3, 2010.

¹²² Shenggen Fan, Tewodaj Mogue, and Sam Beni, "Setting Priorities for Public Spending for Agricultural and Rural Development in Africa," *IFPRI Policy Brief* no. 12 (Washington: International Food Policy Research Institute, 2009), 2.

¹²³ Anonymous interviewee 18, February 10, 2011.

¹²⁴ Interview with Catherine Bertini, January 26, 2011.

7.31 Seeking to Influence US Foreign Policy

In 2009, the Chicago Council on Global Affairs released a report entitled, “Renewing American Leadership in the Fight Against Global Hunger and Poverty,” which made a series of recommendations on how the United States government should orient its foreign development spending related to agriculture, including but not limited to effectively adapting agricultural science and technology to realities of poor small holders and using market mechanisms to achieve this: for example, by managing natural resources more effectively, producing largely for sale as opposed to consumption and increasing small holders access to markets.¹²⁵

The report was funded by BMGF and one of its co-authors was former WFP Executive Director Catherine Bertini, who was then a senior fellow in the Foundation’s Development program advising on its growing agricultural portfolio. Bertini and Shah were also involved in developing the Global Food Security Act (SB 384), a bill passed by the United States Senate Foreign Relations committee earlier that same year,¹²⁶ which was also crafted with the goal of increasing the United States government involvement in strengthening global food security and which included many similar ideas.¹²⁷

In the wake of the Chicago Council report’s release, activists associated with the organization Food First argued that its recommendations and the positions of SB 384 (also known as the Casey-Lugar Food Security Act) could not be separated from the views of BMGF and AGRA, given the key roles played by individuals such as Bertini who advised and were supported materially by the Foundation. Despite lauding their common emphasis on renewed American investment agriculture, both were criticized for ignoring decades of IMF imposed free trade and public sector austerity and cuts to agriculture-specific ODA, and

¹²⁵ The Chicago Council on Global Affairs, *Renewing American Leadership in the Fight Against Global Hunger and Poverty: The Chicago Initiative on Global Agricultural Development* (chaired by Catherine Bertini and Dan Glickman, Chicago, 2008), accessed Nov 23, 2011.

http://www.thechicagocouncil.org/userfiles/file/globalagdevelopment/report/gadp_final_report.pdf

¹²⁶ According to Open Congress, S.384 (the Global Food Security Act of 2009) is “A bill to authorize appropriations for fiscal years 2010 through 2014 to provide assistance to foreign countries to promote food security, to stimulate rural economies, and to improve emergency response to food crises, to amend the Foreign Assistance Act of 1961, and for other purposes.”

<http://www.opencongress.org/bill/111-s384/show>

¹²⁷ Anonymous interviewee 24, January 26, 2011.

instead ascribing hunger in Africa to a lack of technology that could be availed through partnering with United States agrichemical and biotech industries¹²⁸ Consequently “Renewing American Leadership in the Fight Against Global Hunger and Poverty” is viewed by its critics as a normative document which reflects misguided biases shared by BMGF and the United States government, intended to further American commercial interests in low-income countries.

Bertini readily accepts the charge that “Renewing American Leadership in the Fight Against Global Hunger and Poverty” is a normative document, since according to Bertini, that was its purpose. The mission the authors signed onto was to convince the United States government to once again employ its wealth and technical expertise in support of agricultural development in the global South, and particularly in Africa. With this mission in mind, the question became how to get the government to buy into the aforementioned agenda.¹²⁹

One former USAID official notes the Chicago Council’s agricultural strategies are by no means novel and in fact reflect ideas advocated by USAID for 30 years. Support within Congress for such strategies was always tepid, however, and within USAID, the core CGIAR funding was always under threat, until BMGF started backing the same ideas with their assets.¹³⁰

By the time BMGF’s Global Development Program was launched in 2006, the Foundation had already played an important role in revitalizing the American government’s interest in vaccines, by providing both energy and seed money. Both the Bush and Obama administrations followed BMGF’s lead, and there has been sector-wide support for strengthening health care delivery in developing countries. However, according to veterans of American development policy pertaining to agriculture, there has been an ongoing predilection within Congress to fund global health initiatives while ignoring agriculture. Gaining broad political support within the United States for helping developing countries overcome agriculture problems has according to these two informants been much more

¹²⁸ Patel, Holt-Gimenez, and Shattuck, 18-26.

¹²⁹ Interview with Catherine Bertini, January 26, 2011.

¹³⁰ Anonymous interviewee 32, December 3, 2010.

problematic than health, due to the implication that American business might be constrained as consequence. This is compounded by the fact that the United States' R&D advantage in agriculture has been eroded by emerging agricultural sectors in middle-income countries such as Brazil, which during the Cold War was provided with American technology in the name of development, and which now out competes American companies in Brazilian markets. While most policy makers in the United States can agree on what a health-care delivery project looks like, according to one career USAID advisor, the same cannot be said for agricultural development. Questions such as—"Who should subsidize what?" and "Who should license traders?" and "Should biotechnology be involved?"—have allegedly been unresolved for years. From the perspective of these two long-time government insiders, this lack of foreign policy cohesion is directly related to the historical differences between American sympathy for health aid internationally compared to agricultural aid.¹³¹

The genesis of the Chicago Council project was that no matter how much money non-state actors such as BMGF puts in agriculture, it is up to wealthy governments such as the United States to lead global development efforts.¹³² According to Bertini and one other high-level former USAID official, the Chicago Council played an important role bridging the two organizations, for example, by coordinating a seminar in Washington, DC in May of 2010, which was attended by the likes of democratic representative Rosa Delauro, who chaired the sub-committee on agriculture, rural development, food and drug administration and related agencies; Cheryl Mills, then Chief of staff to Secretary of State Hilary Clinton; Rajiv Shah; Namanga Ngongi, AGRA President; and Mark Suzman, then acting President of BMGF's Global Development Program.¹³³

BMGF's influence over American development policy is real; however it is indirect. That Shah once directed the Foundation's agricultural efforts and now heads USAID is, according to Zeigler, more coincidence than anything as he left the foundation at a very early stage and had little or no input into its current agricultural strategy. While it is clear is that similar ideas

¹³¹ Anonymous interviewee 24, January 26, 2011; Anonymous interviewee 32, December 3, 2010.

¹³² Anonymous interviewee 32, December 3, 2010; Anonymous interviewee 24, January 26, 2011.

¹³³ Interview with Catherine Bertini, January 26, 2011; Anonymous interviewee 32, December 3, 2010.

are guiding both USAID and BMGF's work in agriculture, although conflict of interest laws prevent Shah from collaborating directly with the Foundation on development issues.¹³⁴

The Chicago Council, I argue, can be seen as being part of BMGF's larger epistemic community and the Foundation's material support has been key to it achieving instrumental power in American foreign policy. Further evidence of this is seen in the Feed the Future initiative, a US\$ 3.5 billion multi-component aid program established by the Obama administration in 2009 aimed at strengthening global food security in cooperation with other G8 and G20 countries.¹³⁵

BMGF has co-funded parts of Feed the Future, including but not limited to (i) Harvest Plus; (ii) the CGIAR system, to which it is now the single largest donor; and (iii) Harvest Choice, a partnership between the University of Minnesota and IFPRI, which guides investment in Sub-Saharan African agricultural projects.¹³⁶ While not yet a part of Feed the Future, it is the hope of the Chicago Council and the Casey-Luger Bill, according to Bertini, to reinvigorate the involvement of American universities in global agricultural development. The general idea would be to provide developing country governments with a menu of current research being conducted at the different American land grant colleges, which they could choose according to their needs and develop a partner with the university driving the research, effectively a buddy-system for agricultural development.¹³⁷

Designed as a catalyst, the Chicago Council report fulfilled its intended purpose, and BMGF is inextricably linked to this process. From the vantage point of Bertini, what BMGF and the Chicago Council did through this report was to create the necessary space for a variety of new ideas and issues to be presented to American policy makers.¹³⁸ For example the Foundation Working Group on Food and Agricultural Policy, which builds on the report of the Chicago Council, is aimed at influencing United States policy and advocates against dumping and subsidization in Organization for Economic Co-operation and Development

¹³⁴ Interview with Robert Zeigler, July 12, 2011.

¹³⁵ Anonymous interviewee 24, January 26, 2011.

¹³⁶ Anonymous interviewee 32, December 3, 2010.

¹³⁷ Interview with Catherine Bertini, January 26, 2011.

¹³⁸ Interview with Catherine Bertini, January 26, 2011.

(OECD) countries. RF was once again a trailblazer in this regard, influencing, for example, Care International's decision not to monetize food aid, and most countries have moved away from grain as aid.¹³⁹ The United States government, in the eyes of one RF employee, has remained one of the most significant impediments to addressing this persistent problem.¹⁴⁰ BMGF efforts related to food aid have been to provide the catalytic funding for the Purchase for Progress (P4P) program. This WFP pilot-project links Gates' interest in increasing market access for small holders in Sub Saharan Africa to efforts focusing on overcoming opposition to purchasing food intended for aid in the low-income country context, as opposed to the open market. WFP is the single largest purchaser of food in Africa on commodity exchanges; however historically and still today, most of this food aid is purchased from big commercial grain dealers. The concept that BMGF actively championed at the end of 2006 when it first became involved in agriculture was to get WFP to buy more food products directly from smallholder farmer in the regions where operations are occurring in order to boost their base. This is logic, according to Bertini, would certainly provide market access for hundreds of thousands lacking such access; but it presents some challenges for WFP, which needs reliable, quality, price-appropriate food, and small holders are not structured to provide this (i.e. how to test quality, price, transport and store etc.). The ideas informing P4P are not new per say, and WFP had to submit a proposal to the Foundation for formal consideration of the project. Nevertheless illumination of P4P as an international policy shift in food aid is inextricably linked to BMGF, which funded its infrastructure although not the actual food.¹⁴¹ By 2010 WFP was committed to purchasing almost 50,000 metric tons of grain, produce and milk from smallholders,¹⁴² and over the five-year period of the pilot, the organization hopes to provide new revenue streams to an estimated 350,000 smallholders in twenty-one countries.¹⁴³

¹³⁹ CARE, *White Paper on Food Aid Policy*, CARE USA (June 6, 2006), 4-5, accessed July 11, 2013, http://www.care.org/newsroom/publications/whitepapers/food_aid_whitepaper.pdf

¹⁴⁰ Anonymous interviewee 3, December 6, 2010.

¹⁴¹ Interview with Catherine Bertini, January 26, 2011.

¹⁴² BMGF, "Foundation Joins Global Trust Fund to Support Small Farmers," (April 22, 2010), accessed May 9, 2011, <http://www.gatesFoundation.org/press-releases/Pages/global-trust-fund-for-poor-farmers-100422.aspx>

¹⁴³ Philip Rucker, "Aid Plan Aims to Help Poor Farmers Reach Markets," *Washington Post* (September 25, 2008), accessed January 18, 2010., <http://www.washingtonpost.com/wp-dyn/content/article/2008/09/24/AR2008092401051.html>

However in order for it to be brought to scale and institutionalized at a global level, WFP must now convince governments to buy into the approach and this presents some stark challenges in the American context as purchasing locally works against traditional United States policy food aid policy. Nevertheless, according to one former senior USAID official, receptivity for governance innovation in agricultural development within the American government is higher than it has been in over thirty years, and BMGF can take significant credit for enabling such innovation as well as the political will to support it. While individuals within USAID have been pushing similar ideas within government for years, the political will required to enact them into policy has been lacking. For right or wrong the Foundation has come in and made a huge difference.¹⁴⁴

7.32 Seeking National Policy Influence Beyond the United States

BMGF has been a catalyst for the recent American support for global agricultural development in the new millennium. As has been the case with the United States, the Foundation's influence in national agricultural policy-making arenas outside of the American context is indirect, but it is real. Ironically, this influence appears to be limited within developing countries. BMGF has for example, according to Robert Zeigler, had some high-level discussions in China where they are a registered charity, after which restrictions on shipments of rice lines outside of China by Chinese research organizations were removed for a specific BMGF funded project. Since this has not been extended as a general policy, it is highly unlikely that this change is the result of the Foundation's increasing policy influence in China.¹⁴⁵

There is however strong evidence that the Foundation is actively seeking the support of other Northern governments for increasing the attention paid to agriculture as a means to reduce poverty in poor countries. The Montpellier Panel Report embodies this effort in the context of the EU. Led by former RF president Gordon Conway, the Montpellier Panel was forged in 2009 around the goal of strengthening state and multilateral support for agricultural development in Sub-Saharan Africa within the EU, and improving related policy

¹⁴⁴ Anonymous interviewee 32, December 3, 2010.

¹⁴⁵ Interview with Robert Zeigler, July 12, 2011.

coordination.¹⁴⁶ Recently this advocacy has been extended to African governments as well.¹⁴⁷

BMGF did not play a direct role in Montpellier's formation, which is largely comprised of individuals with pre-existing ties to Conway. However it has since supported the panel's work to lobby European governments to provide more support for agriculture in Africa and better coordinate their individual aid efforts.¹⁴⁸

In this regard the Montpellier Panel Report is very similar to the Chicago Council Report, in that the mission of both reports has been to lobby Northern states to put agricultural development back on their foreign policy agendas while embracing a set of ideas that have come to shape BMGF's own agricultural program. Moreover both reports were funded by BMGF and penned by individuals who have come to inform the Foundation's approach to strengthening agricultural sectors and food security across the global South. To reinforce this point, when Conway—who is also on the Chicago Council's advisory group and thus very much aware of their experience—received the initial planning grant, BMGF recommended the Chicago Council as a template.¹⁴⁹

In addition to underwriting advocacy undertaken by others, BMGF has also directly sought to reverse Northern governments' reluctance to invest in agricultural development by providing US\$ 30 thirty million in seed funding for the new multi-donor Global Food Security Trust Fund and the GAFSP, which is managed by the World Bank. Founding donors include BMGF, as well as the United States, Canada, Spain, and South Korea, with a total of US\$ 880 million pledged upon its launch in April, 2010.¹⁵⁰

As noted by Timothy Wise and Sophia Murphy,¹⁵¹ GAFSP is effectively a follow-up of the L'Aquila statement made at the 2009 G8 meeting in L'Aquila, Italy. There Northern States committed to boosting ODA spending on agriculture to the level that it was at prior to the

¹⁴⁶ The Montpellier Panel, *Sustainable Intensification: A New Paradigm for African Agriculture* (London, 2013).

¹⁴⁷ Anonymous interviewee 21, February 8, 2011.

¹⁴⁸ Ibid.

¹⁴⁹ Interview with Gordon Conway, February 8, 2011.

¹⁵⁰ Food and Agricultural Organization of the United Nations, "Agriculture and Food Security Trust Fund Launched," (April 22, 2010), accessed August 15, 2010.

<http://www.fao.org/news/story/en/item/41451/icode/>

¹⁵¹ Timothy A. Wise and Sophia Murphy, "Resolving the Food Crisis: Assessing Global Policy Reforms Since 2007," (Medford: Global Development and Environment Institute and Institute for Agriculture and Trade Policy, 2012), 12-13.

embrace of neo-liberalism and associated development policies in the 1980s.¹⁵² ODA for agricultural productivity had declined precipitously from its peak at late 1980s, reaching its low point in 2006.¹⁵³ This pledge represents a renewed commitment to reverse this trend.¹⁵⁴

GAFSP is a new funding mechanism intended to channel a share of the L'Aquila pledges to existing country-led initiatives such as the Comprehensive Africa Agriculture Development Programme (CAADP), multilateral initiatives such CGIAR, and CSOs.¹⁵⁵ While not an autonomous entity like the Global Fund, GAFSP nevertheless shares with the Global Fund a common vulnerability stemming from uncertainty over whether the funding commitments on which they depend will be fulfilled.¹⁵⁶ As noted by Alex McCalla, Professor Emeritus and former dean of the UC Davis College of Agricultural and Environmental Sciences, this would not be the first time that large commitments have been made and not acted upon by Northern governments.¹⁵⁷ The United Nations World Food Council (WFC) for example was created in 1974 to function as the coordinating body for global food security efforts.¹⁵⁸ While WFC served to better illuminate the social and political determinants of hunger that FAO had done prior to its creation,¹⁵⁹ it was disbanded less than two decades later in 1993 after it became apparent that no single entity could marshal the resources to address global food insecurity, and major donors, led by the United States, pulled their support for its existence.¹⁶⁰ Moreover according to McCalla, in the mid-1990s CGIAR Chair Ismail Serageldin received commitments from the World Bank and other donors for increased spending on agriculture, which were ultimately unfulfilled.¹⁶¹ Therefore the danger persists that any one of GAFSP donors may withdraw from their commitments, or revert back to engaging in damaging practices such as issuing agriculture-related ODA in the form of wheat, thereby continuing a pattern of dumping which undermines indigenous production.

¹⁵² "L'Aquila Joint Statement on Global Food Security," *L'Aquila Food Security Initiative* (G8 Meeting, L'Aquila, July 10, 2009).

¹⁵³ See for example Morrison, Bezemer, Dirk., and Arnold.

¹⁵⁴ Anonymous interviewee 16, December 9, 2010.

¹⁵⁵ Wise and Murphy, 15; Anonymous interviewee 16, December 9, 2010.

¹⁵⁶ Wise and Murphy, 15.

¹⁵⁷ Interview with Alex McCalla, December 9, 2010.

¹⁵⁸ John D. Shaw, "The World Food Council: The Rise and Fall of a United Nations Body," *Canadian Journal of Development Studies/Revue canadienne d'études du développement* 30, no. 3-4 (2010): 690.

¹⁵⁹ Edouard Saourna, *FAO in the front line of development* (Rome: Food and Agriculture Organization of the United Nations, 1993)

¹⁶⁰ Shaw, 689.

¹⁶¹ Interview with Alex McCalla, December 9, 2010.

BMGF's advocacy efforts have been aided by the volatility of global food prices,¹⁶² driven in large part by the financial speculation of agricultural communities,¹⁶³ which have amplified global hunger and which have been seen by states and multi-lateral institutions, including the IMF and World Bank, as constituting a threat to political stability across global South.¹⁶⁴ While this emphasis on advocacy has aroused criticism, the Foundation's funding research supports its position to change the minds of policy makers, underwriting advocacy groups who are in a position to shape national policy-making in both domestic and international arenas, which is according to RF's Gary Toenniessen entirely consistent with the purpose of private foundations in American society.¹⁶⁵ As a practitioner of private diplomacy, therefore, BMGF has simply sought to emulate the tradition carved out by RF.

7.4 BMGF & the CGIAR

At the time of its establishment, the CGIAR was hailed as an innovative approach to financing agricultural research for the benefit of developing countries; however it too has been subject to austerity in the neo-liberal era,¹⁶⁶ and many of its original proponents feel it has become the kind of overly bureaucratic institution its creators intended it to replace.¹⁶⁷ Under the leadership of Ismail Serageldin when the World Bank ceased functioning as a donor of last resort, and extending to the tenure of Ian Johnson who assumed the Chairman role in 2000, the proportion of funding that was restrictive (i.e. reserved by donors for special projects) increased dramatically. This provided non-members with new leverage but also created competition between the centres for funds. Each of the fifteen IARCs are self-governing, meaning they receive funds from whomever they want and spend it on whatever

¹⁶² Anonymous interviewee 28, July 6, 2011; for one explanation of the contextual determinants behind the fluctuation in global agricultural commodity prices, see Jennifer Clapp, "Food Price Volatility and Vulnerability in the Global South: Considering the Global Economic Context," *Third World Quarterly* 30, no. 6 (2009): 1183-1196.

¹⁶³ Matías E. Margulis, "The Regime Complex for Food Security: Implications for the Global Hunger Challenge," *Global Governance* 19 (2013): 65.

¹⁶⁴ See for example Steven R. Weisman, "Finance Ministers Emphasize Food Crisis Over Credit Crisis," *NYT* (April 14, 2008); SPIEGEL Staff, "The Fury of the Poor," *Spiegel Online* (March 14, 2008), accessed February 10, 2011, <http://www.spiegel.de/international/world/0,1518,druck-547198,00.html>; and Keith Bradsher, "High Rice Cost Creating Fears of Asia Unrest," *Straight* (March 29, 2008), accessed June 14, 2012, <http://www.straight.com/article-139187/the-coming-food-catastrophe>

¹⁶⁵ Interview with Gary Toenniessen, December 6, 2010.

¹⁶⁶ Jonathan Knight, "Crop Improvement: A Dying Breed," *Nature* 421 (2003): 568-69. 568-570; Anonymous interviewee 24, January 26, 2011.

¹⁶⁷ Anonymous interviewee 19 November 29, 2010.

the want. This system, according to Alex McCalla, who chaired CGIAR's Technical Advisory Committee from 1988 to 1994, has culminated in a situation whereby being a restricted donor on a bilateral basis with individual centres ironically confers more influence than having general membership, which is subject to a roster of rules. Consequently, the benefit of membership was greatly diminished and individual centres can now be subject to thirty plus reviews (i.e. one per each donor) every year.¹⁶⁸

Beginning in 2005, BMGF began providing the CGIAR with approximately US\$ 70 million per year, which consistently placed the Foundation within the top three or four donors positions.¹⁶⁹ However, by the end of 2009 when it sought and attained general membership within the organization, all of the Foundation's contributions were restricted in nature. In this period, the Foundation was perceived by some to be taking advantage of previous investments by unrestricted donors picking low hanging fruit through funding the final stages of long-term projects and receiving what was viewed as disproportionate credit for contributions.¹⁷⁰

Moreover, the Foundation's high level of funding, without being a member of the CGIAR, also caused embarrassment within the system as BMGF was picking what it wanted to fund without any formal accountability for its actions.¹⁷¹ An example of this according to one well positioned individual formerly affiliated with USAID was the Foundation's early funding of specific research related to cassava at both CIAT and Institute of Tropical Agriculture (IITA), while balking at underwriting general operating costs, which led to tensions within the broader CGAIR system. According to this source, most individual centres' overhead is between fifteen to twenty-five percent. BMGF initially refused to fund the fifteen percent overhead, so the centres had to draw from their core funding to cover this gap. By doing this, BMGF was effectively taking advantage of a system of governance without giving in to it, although the Foundation was not unique in this regard. A number of longtime members,

¹⁶⁸ Interview with Alex McCalla, December 9, 2010.

¹⁶⁹ Anonymous interviewee 30, July 20, 2011.

¹⁷⁰ Anonymous interviewee 4 July 12, 2011.

¹⁷¹ Anonymous interviewee 22, November 12, 2010.

including but not limited to Canada, have limited their contributions to overhead costs to less than the minimum (e.g. ten percent).¹⁷²

The hire of Prabhu Pingali in 2008 appears to have reversed this trend. Having spent over a decade as an agricultural economist at both CYMMIT and IRRI, and five years as Director of FAO's Agricultural and Development Economics Division, Pingali brought with him a deep understanding of CGIAR system. According to sources within and external to the Foundation, when the CGIAR reform process was initiated in 2007, BMGF initially sought to avoid being involved in its politics by not seeking out member status. Yet despite sponsoring much of the research being carried out through the system, an inability to ensure its investments were used effectively, to state which parts of reform process it thought was proving to be beneficial or weak, or to signal to the individual centers its support for their efforts was hampered by not having member rights (e.g. the right to vote on policy decisions). To address this perceived lack of accountability, accommodate wishes of regular members, and gain greater influence over the system's direction with the goal of bringing more efficiency and effectiveness, the Foundation—following the examples of the RF, Ford Foundation (FF) and more recently Syngenta Foundation—sought out and attained CGIAR membership in December of 2009.¹⁷³

Whether BMGF's capital contributions have created momentum for Northern states to fulfill their pledges to GAFSP is not clear. The pledge for contributions of up to a billion dollars per year with Core Unrestricted Contributions accounting for sixty percent of the total, which according to Alex McCalla, is significant as it would greatly improve the CGIAR system by markedly reducing the influence of individual members and ad-hoc donors.¹⁷⁴ Moreover according to one senior BMGF official, if donors do start redirecting money from single initiatives to broader research programs, it will mean greater collaboration between individual centres. The reason for this is that research programs with clearly articulated outcomes (for roots and tubers, maize etc.) are increasingly cutting across the lines traditionally separating the responsibilities of centers. Seen in this light, the GAFSP pledge

¹⁷² Anonymous interviewee 32, December 3, 2010.

¹⁷³ Anonymous interviewee 30, July 20, 2011; Anonymous interviewee 32 December 3, 2010; Anonymous interviewee 4, July 12, 2011; Anonymous interviewee 29 July 20, 2011.

¹⁷⁴ Interviewee with Alex McCalla, December 9, 2010.

has the potential to enable the CGIAR system to be the truly collaborative vehicle its original RF and FF architects intended it to be.¹⁷⁵

Ironically, despite its regular membership status, it would appear that for at least the immediate future, BMGF is maintaining its past approach of funding restricted projects at individual centers, which seemingly works against efforts to shift back to a financing scheme prioritizing general funding. In this regard, however, it is not alone according to Robert Zeigler who notes that the majority of donors continue to contribute to the system with restricted funds.¹⁷⁶

Despite an apparent ongoing volition for firm control over how its assets are spent, which to critics conveys a sense of exceptionalism, BMGF has brought tangible benefits to agricultural-related research intended to benefit developing countries. However from the perspective of Louise Fresco, University Professor at the University of Amsterdam who from 2000 to 2006 was FAO assistant director-general for Agriculture, the Foundation's most significant contribution has been its commitment to illuminate the neglect of agricultural development, which has been effective, as states, international organizations and firms are once again taking agriculture seriously as a development issue.¹⁷⁷

As has been the case with its Global Health Program, the Foundation has embraced challenges which industry alone has shown little appetite, such as the development of submergence tolerant rice. IRRI has developed flood tolerant varieties, according to Robert Zeigler, because the rice production most adversely affected by flooding typically occurs among poor farmers who plant inbred rice varieties that will be of limited interest to seed companies. With money from BMGF, IRRI has been able to demonstrate the performance of these varieties under flood conditions. The governments of India, Bangladesh and to a lesser extent Nepal have been investing very large sums of money to ensure both seed production and product delivery to those poor farmers situated in remote areas. With guidance from IRRI, the public sector within these states have been re-invigorated as far as

¹⁷⁵ Anonymous interviewee 30, July 20, 2011.

¹⁷⁶ Interview with Robert Zeigler, July 12, 2011.

¹⁷⁷ Interview with Louise Fresco, November 22, 2010.

rice research goes, and for this reason as well as the positive results in terms of flood tolerance and overall uptake, Zeigler argues that BMGF's efforts warrant acknowledgement.¹⁷⁸

Following the example set by RF, BMGF has proven itself adept at creating incentives to engage the innovative capacity of industry. The Foundation's penchant for collaboration with the private sector in pursuit of innovation for the public good in conjunction with their number one donor status within CGIAR has led to concerns that BMGF is leading the system towards greater engagement with for-profit entities. However, from the perspective of Pat Mooney, Executive Director of the ETC Group, the system was already well supportive of the PPP trajectory prior to BMGF becoming interested in agriculture.¹⁷⁹

As per CSOs, industry maintains a presence within CGIAR system through representation.¹⁸⁰ However, up until the World Bank's commitments were greatly reduced, there was, according to Mooney, a general lack of awareness about the system within the private sector. Since the mid-1990s, the attitude within IARCs has been to push for more links with big seed companies, which has led to increased interest on the part of for-profit entities in the fruits of a system created for the public good.¹⁸¹

7.5 BMGF and FAO

Like AGRA, CGIAR was created outside of the traditional UN structure in large part because of the perceived political and bureaucratic constraints of working within that system. BMGF has played important roles in the advancement of these two initiatives in addition to the establishment of other health-oriented analogues. What does this say then of BMGF's view of IOs such as FAO also working towards strengthening agricultural capacity and food security across the global South?

¹⁷⁸ Interview with Robert Zeigler, July 12, 2011.

¹⁷⁹ Interview with Pat Mooney, November 12, 2010.

¹⁸⁰ Anonymous interviewee 19, November 29, 2010.

¹⁸¹ Interview with Pat Mooney, November 12, 2010.

One prominent perspective from within the Foundation is the importance of FAO and other UN specialized organizations such as has UN Committee on World Food Security (CFS), which only increased in the wake of an increase in the number of actors seeking to influence how agricultural challenges and global food insecurity should be addressed collectively. From this perspective, being a member country organization with every country having an equal vote tends to make FAO slow moving and cumbersome. Yet it is also acknowledged to be one of the last remaining forums in the world where countries can come together and have inter-country dialogue on agriculture as equals.¹⁸² Moreover, the CFS provides a space for countries with little structural power or CSOs to shape policy on food security issues,¹⁸³ which is why it considered by its proponents to be the most authoritative forum for discussions on global food security.¹⁸⁴ Indeed, the democratic and inclusive and nature of FAO and CFS confers a degree of legitimacy that private or wealthy country organizations cannot attain.

Moreover, in addition to democratic legitimacy, FAO is viewed by BMGF's leadership as maintaining two other key comparative advantages over other organizations working on food and agricultural issues. The first is its ability to provide global data and statistics, as it remains the sole entity to which states entrust their national data. Because the quality of this data is deemed to be overall quite poor at present, this is one area in which BMGF is attempting to help FAO fulfill its mandate.¹⁸⁵

The other area where FAO is deemed to maintain a comparative advantage is on standard-setting, which is particularly important for food and agriculture (i.e. safety, biosafety etc.). While the Foundation's leadership consider CGIAR to have been very effective in the role of generating new technology and ensuring it is applied and adopted (the role of the innovator), it has not been deemed particularly effective at addressing multilateral policy challenges, for example, related to trade, standards, or climate change. This is however an

¹⁸² Anonymous interviewee 30, July 20, 2011.

¹⁸³ Jennifer Clapp and Sophia Murphy, "The G20 and Food Security: a Mismatch in Global Governance?" *Global Policy* 4, no. 2 (2013): 130.

¹⁸⁴ Norah Mckeon, "Global Governance for World Food Security: A Scorecard Four Years After the Eruption of the "Food Crisis," BOELL (Month Day 2011), accessed August 13, 2013, <http://www.boell.de/downloads/Global-Governancefor-World-Food-Security.pdf>

¹⁸⁵ Anonymous interviewee 30, July 20, 2011.

area where BMGF considers the FAO to have performed well, for example, in partnership with WHO by leading the development of the CODEX standards. Moreover, because both FAO and WHO are multi-lateral organizations, they have the authority to demand from member states that the standards they set are enforced, which BMGF leadership admits the Foundation lacks.¹⁸⁶

From this perspective, IOs including FAO are perceived to have credibility problems because they have taken on, or been forced to take on, too many responsibilities, without sufficient increases in the resources required to fulfill them. To be efficient, decision makers within BMGF's development program believe FAO needs to be substantially reduced in size to limit its focus to those functions it does well.¹⁸⁷

While acknowledging that the organization continues to be considered a necessary actor in global governance, there is an understanding within BMGF that regardless of whether FAO exists, there is still a need for other organizations to carry out the work its grants are designed to fund. This is because BMGF does not have operational programs and clearly relies on its partners (e.g. IFPRI, FAO, firms, universities etc.) to fulfill its goals, from basic research, to product development, to advocacy on and implementation of policy.¹⁸⁸

7.6 The limits of the Gates Foundation's influence in the Governance of Global Agricultural Development

Global rules governing trade and intellectual property favour rich countries and corporations. As previously noted, the IAASTD has explicitly called for changes to WTO rules that would make SEI for the world's poor easier to undertake.¹⁸⁹ Even though political advocacy is increasingly being employed by BMGF to get specific ideas into the relevant policy making arenas, it has not called for such changes. This may be because there is likely no real role for a private philanthropic foundation in attempts to resolve international treaty

¹⁸⁶ Anonymous interviewee 30, July 20, 2011.

¹⁸⁷ Ibid.

¹⁸⁸ Ibid.

¹⁸⁹ IAASTD, 491-492; see also Ian Scoones, "The Politics of Global Assessments: the Case of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD)," *Journal of Peasant Studies* 36, no. 3 (2009): 557, 561. 547-571

disputes, for example, in bringing coherence to conflicting rules related to Intellectual Property Rights (IPR) created by multiple regimes (i.e. the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), the Convention on Biodiversity, and FAO's Plant Genetics Treaty). Nevertheless RF, via the Public Intellectual Property Resource for Agriculture (PIPRA) and AATF, actively supported efforts to provide access to Intellectual Property (IP) where it could be used to benefit historically marginalized populations.¹⁹⁰ Moreover, Gordon Conway's 1999 speech to the Monsanto board of directors is often cited as the catalyst for the firm changing their behavior by disavowing Genetic Use Restriction Technologies.¹⁹¹

With these precedents in mind, can BMGF maintain its status as a progressive agent of change in global agricultural development without challenging industry when its positions conflict with values espoused by the Foundation? Moreover to what degree can Bill Gates' star power at Davos, or the diplomatic efforts of the Foundation's epistemic networks influence the policy positions of firms and the states, thereby creating the conditions for structural change? These are important questions because the vision of "creative capitalism" articulated by Bill Gates sees a heightened role for firms in strengthening agricultural development in low-income countries.

From the Foundation's leadership, there is a general view that however big BMGF's resources appear to be, they are nowhere near sufficient to fully address any single issue in which the Foundation is engaged. Consequently the answer to the question of whether BMGF can overcome structural impediments to health disparities and strengthening agricultural sectors in developing countries is that the Foundation is merely one entity in a diverse sea of actors (states, IOs, NGOs, firms, and other foundations etc.) all actively seeking solutions to common problems, often, but not always in concert with one another. With this in mind, one of BMGF's proven strengths is in creating new ways of bringing

¹⁹⁰ Anonymous interviewee 21 February 8, 2011.

¹⁹¹ Gordon Conway, "The Rockefeller Foundation and Plant Biotechnology," (Address by RF President Gordon Conway to the Monsanto Corp Board of Directors June 24, 1999), accessed Nov 22, 2011, http://www.biotech-info.net/gordon_conway.html

these different skill-sets together in pursuit of more effective collection action than has existed otherwise, with GAVI and AGRA listed as the most prominent examples of such.¹⁹²

In this light, BMGF is not dedicated to the status quo in that it is seeking to bring more viable options to bear on very complex challenges.¹⁹³ Yet it is by no means an activist organization seeking to name and shame states and firms for practices that work against its goals because the advancement of the Foundation's knowledge structures requires their embrace. For BMGF, therefore, caustic criticism of the sub-optimal performance of states and firms is not conducive to the advance of new norms within policy-making arenas.

Moreover, American legal restrictions prohibit the Foundation from explicitly engaging in normative lobbying. Consequently its advocacy work is informed by the existing evidence-base, which is why so much of its endowment is put into research.¹⁹⁴ As such, the biggest threat to BMGF's overall credibility may not be its unwillingness to challenge structural inequity in political arenas, but instead whether its strategies lead to its stated goals being achieved.¹⁹⁵ This is why so much effort is spent in trying to illuminate innovation it deems as successes;¹⁹⁶ as in the eyes of one senior staff member, the Foundation's credibility rests in large part on showing what is going to work and what should therefore be adopted by others.¹⁹⁷

The Foundation acknowledges that it is important to have responsible critics watching over its shoulders, and despite having received substantial criticism over their perceived lack of receptivity and transparency for honest feedback, it purports to engage with a wide variety of commentators and act on their constructive criticism. Yet it maintains its own agendas, for which it is wholly unapologetic,¹⁹⁸ and in this regard the Gates family has been quite open about the two functions in which they see the Foundation effectively serving its intended

¹⁹² Anonymous interviewee 28, July 6, 2011.

¹⁹³ Anonymous interviewee 29, July 20, 2011.

¹⁹⁴ Anonymous interviewee 28, July 6, 2011.

¹⁹⁵ Anonymous interviewee 22, November 12, 2010.

¹⁹⁶ See for example www.developmentprogress.org, as well as the Living Proof project <http://www.one.org/livingproof/en/> which Bill and Melinda Gates funded and the Foundation has partnered with.

¹⁹⁷ Anonymous interviewee 28, July 6, 2011.

¹⁹⁸ Anonymous interviewee 29, July 20, 2011.

beneficiaries in the capacity of advocacy: first as a catalyst for resource mobilization, and second as an illuminator of scientific innovation.¹⁹⁹

The Foundation's funding of the advocacy work of Bertini with the Chicago Council and Conway's Montpelier Panel are illustrative of what it seeks to achieve at a high level and how it seeks to do so. As internationally renowned leaders in their fields, Bertini and Conway are perceived by the Foundation's leadership as having earned legitimacy that insulates them from being criticized of being swayed by BMGF money. Moreover, both have their own networks—both scientific and political—which indirectly the Foundation has been able to capitalize on. Both therefore bring knowledge, gravitas as well as political influence to the task of illuminating advances in technological knowledge and the means of organization at high levels. Capitalizing on the strengths of individuals in pursuit of fostering relationship at high levels (i.e. with policymakers in governments or regional organizations) is according to one senior Foundation staff member important for the Foundation in the same way that it is in fostering relationships with community organizations at the grassroots level. That both ends of the spectrum buy into particular ideas is considered fundamental by BMGF leadership to ensuring that innovation can be applied as intended and sustained over the long term.²⁰⁰

Another range of partnerships centered on building the requisite evidence-base with which to inform policy are less about individuals than actual organization. For example, to help ensure the L'Aquila Group follows through with its commitments, the Foundation has contributed to the "One Campaign" to publicly assess the L'Aquila Group's claims.²⁰¹ Furthermore, because BMGF is interested in applied policy as opposed to research policy, it funds organizations such as the Overseas Development Institute to assess the credibility of approaches which governments or IOs take in both their health and development work,²⁰² which is revealing of being not only champions of issues but also champions of particular approaches to understanding those issues.

¹⁹⁹ Anonymous interviewee 28, July 6, 2011.

²⁰⁰ Ibid.

²⁰¹ ONE, *Agriculture Accountability Report: Holding Donors to their L'Aquila Promises* (London: ONE International, 2011).

²⁰² Anonymous interviewee 28, July 6, 2011.

7.7 The Future of BMGF's Agricultural Program

BMGF is now one of the most important sources of funds for agricultural development-related research. Yet from the perspective of one prominent molecular biologist working in agriculture, its preferences are already well known and this is seen as undermining its stated goal of attracting new ideas. For individuals committed to tearing down the international architecture securing existing IP laws, the Foundation is at a critical point in its history. If it proceeds while supporting the dominant paradigm (i.e. supporting the logic of privatization as a reward for innovation and what are viewed as monolithic approaches via CGIAR), it will not accomplish its goals of being a catalyst of innovation in either science or governance, which is problematic because so many actors are following the BMGF's example. From the perspective of such critics, the Foundation can only become the true catalyst for innovation it purports to be once it embraces and supports decentralization and democratization to facilitate access to research tools.²⁰³

This viewpoint reinforces my argument that BMGF is following in the wake of RF as a catalyst of institutional innovation oriented towards increasing access to new technologies intended to benefit the world's poorest people, yet designed to work within the parameters of the existing state-imposed rules of the world. In the neo-liberal era, BMGF's unparalleled wealth provides it with significant material influence relative to the diminishing resources of other—most importantly public—actors. Its ability to leverage money to advance favored ideas allows for a level of influence over research and policy trajectories is out of proportion to what is actually spent via grants. This disproportionate ideational influence is likely to be conferring a degree of structural power in terms of skewing priorities in agriculture in the same way that it is skewing research trajectories in global health. Yet while RF and BMGF do facilitate innovation and appear to have a lot of money, their material and political influence is still small compared to states and large firms.

RF and FF, for example, were the catalysts of the Green Revolution. They provided much of the initial funding for developing and proving the viability of the technology upon which the revolution was based. However, compared to how much governments eventually spent after

²⁰³ Anonymous interviewee 20, June 8, 2011.

buying into the idea of the Green Revolution (on fertilizers, irrigation, extension systems and etc. to ensure a proven return on the their investment), those initial funds were actually quite small. As noted by one BMGF decision-maker, the foundation is playing a similar role today in the context of a the resurgence of interest in agriculture in Africa, and as a result, it is safe to predict that BMGF's contribution to any new agricultural revolution will never exceed five percent of the total cost.²⁰⁴

Moreover, since 2011 BMGF's Development Program has broadened its focus beyond agricultural and food security initiatives. While its agricultural program initially took centre stage, its water sanitation and hygiene program was kept as a "learning program" in the Special Interests section of the Foundation. Water conservation is a topic that has received considerable attention by scientists,²⁰⁵ and politicians alike,²⁰⁶ but the same cannot be said for sanitation, which, in the eyes of the Foundation and many public health experts,²⁰⁷ is a neglected issue in the same way that diseases like TB and malaria were for many years neglected issues. The scale of the demand for sanitation greatly exceeds the capacity to provide traditional piped water and water-fed latrines,²⁰⁸ and as a consequence BMGF's leadership believes that new technologies and behavioral changes are urgently needed. Through its grant-making, the Foundation is actively subsidizing experimental research into new sanitation options intended for water-free environments as well as how to promote the associated behavioral changes (i.e. community led initiatives for such communities to become "open defecation free"), thus seeking to catalyze change at the local level from within. Extending its emphasis on technological innovation to the realm of sanitation is

²⁰⁴ Anonymous interviewee 30, July 20, 2011.

²⁰⁵ See for example Ian Scoones, Chris Reij, and Camilla Toulmin, *Sustaining the Soil: Indigenous Soil and Water Conservation in Africa* (London: International Institute for Environment and Development, 1996); see also William Critchley and John W. Gowing, *Water Harvesting in Sub-Saharan Africa* (New York: Routledge, 2012).

²⁰⁶ See for example John Vidal, "Cost of Water Shortage: Civil Unrest, Mass Migration and Economic Collapse," *The Guardian* (August 17, 2006), accessed July 14, 2013, <http://www.theguardian.com/environment/2006/aug/17/water.internationalnews>; see also Somini Sengupta, "Often Parched, India Struggles to Tap the Monsoon," *The New York Times* (October 1, 2006), accessed July 14, 2013, <http://www.nytimes.com/2006/10/01/world/asia/01india.html?ref=thirstygiant>; see as well Scott Moore, "China's Massive Water Problem," *The New York Times* (March 28, 2013), accessed July 14, 2013, http://www.nytimes.com/2013/03/29/opinion/global/chinas-massive-water-problem.html?_r=0

²⁰⁷ Christine L. Moe and Richard D. Rheingans, "Global Challenges in Water, Sanitation and Health," *Journal of Water and Health* 4 (2006): 41.

²⁰⁸ Sandy Cairncross, "Sanitation in the Developing World: Current Status and Future Solutions," *International Journal of Environmental Health Research* 13, no. S1 (2003): S123-S131.

expected to increase criticism of the Foundation being fixated on developing silver bullets, yet its staff emphasize that it does work in both product development and delivery.²⁰⁹

7.8 Conclusion

The maturation of BMGF as a global albeit private development organization has occurred largely as a result of it broadening its focus beyond health. The motivation that brought RF to Mexico—that being helping smallholders who have traditionally kept their seeds increase their productivity and incomes—remains the same motivation that has brought BMGF to Sub-Saharan Africa through organizations like AGRA and AATF. A critical aspect of the past and present work has been facilitating technology transfer with the hope of improving many so-called “orphan crops” (e.g. cassava, lentils, and squash) in which the private sector, focused on globally traded crops (e.g. wheat, maize, rice, barley) has never shown interest.²¹⁰

In general the Foundation’s approach to agricultural development has mirrored its approach to health. Many of the diseases BMGF focuses on are rooted in poor sanitation and nutrition because for the world’s poorest people, public health and development are fundamentally intertwined. While BMGF donations in conjunction with the Buffett gift have endowed the Foundation with tremendous material assets from which it provides grants, the problems it seeks to address are immense and multi-faceted and its assets still finite, a small fraction of what states have the capacity to spend should they choose to do so. Accordingly it was decided early on that the Foundation’s comparative advantage in both global health and agricultural development would be in leveraging market-based solutions to develop needed products and facilitate access to them.²¹¹

I have argued that BMGF displays discursive, instrumental and structural power in the governance of global agricultural development, which has been attained through its support for and promotion of SEI and private diplomacy. Its strong support for CGIAR system and PPPs such as the WEMA initiative and GAIN strengthen the narrative that technologies

²⁰⁹ Anonymous interviewee 28, July 6, 2011.

²¹⁰ Anonymous interviewee 29, July 20, 2011; Anonymous interviewee 16, December 9, 2010.

²¹¹ Anonymous interviewee 28, July 6, 2011.

employed in biofortification and genetic modification are critical for addressing the challenges of strengthening agricultural sectors and related food insecurity.

The Foundation's instrumental power has been exercised directly in its ability to leverage financial commitments from larger players, as has occurred via GAFSP and AGRA. Yet this influence has been indirect as well, via the enablement of organizations and networks such as the Chicago Council and Montpelier panel, whose members share a common view with the Foundation over the determinants of and solutions to global hunger, and who are directly involved in lobbying governments for changes in aid policy.

Its structural power has come in the form of selective grant-making, and through the enabling of governance mechanisms that provide support for maintaining in place, the existing rules and structures governing the global political economy. BMGF has thus continued the RF tradition of adaptation in governance by innovating within externally imposed parameters. In the neo-liberal era, this means accepting Northern governments' preference for firms developing and producing goods intended to address discrete problems. This is not to say that the Foundation is not aware of a substantive need across much of the global South—particularly Sub-Saharan Africa—for investments in, for example, the infrastructure supporting health and agricultural sectors (i.e. hospitals, roads, and irrigation schemes). However, from the perspective of BMGF's leadership, the costs of providing these are beyond the capacity of foundations and as such must be paid for by states and development banks.²¹²

While inspired by, and in many ways modeled after RF, BMGF's willingness to engage with the private sector goes beyond RF's adaptation to the rise of corporate power resulting from the diffusion of neo-liberal ideology. BMGF wants to take risks and invest in technological innovation that has the potential for big payoffs as opposed to investing in what is already known to work, collaborating with industry factors prominently in strategies to achieve these goals. Concern has been expressed within the broader agricultural community that that BMGF's push towards greater private sector involvement in producing what are supposed to

²¹² Ibid.

be public goods may end up competing with or clouding the primary goal of increasing smallholder's capacity to farm. However, based on his articulation of "creative capitalism," Bill Gates' answer would likely be that it is fully in the interest of the private sector for the small holder to succeed financially. Hence the utility of hiring people from the private sector to ensure their expertise is sufficiently tapped.

Bill Gates is, in the eyes of one former FAO official, representative of a larger epistemic community within the business world that believes it is good business to lift people out of poverty. Certainly BMGF's core leadership is very strongly convinced of this and has helped embed the narrative in both the public and private spheres. Moreover because there are some very large private companies (e.g. PepsiCo) that are making changes to their leadership based around this idea, there is, in the eyes of this individual, currently a degree of optimism about the possibilities for collaboration between private and public sector organizations that was previously lacking in policy arenas.²¹³ Nevertheless, notes Conway, it is too early to say how any increase in wealthy governments' attention to agricultural development will impact private sector involvement in global food security initiatives and vice-versa.²¹⁴

BMGF is unique according to one executive within the its Global Development program because there has never been a single agricultural program this large emphasizing investing in global public goods. The Foundation is facilitating access not only to goods intended to benefit producers, but also to data and statistics that can be used by a very broad audience. In this regard, its efforts seek to increase the effectiveness of actors at all levels: from the grassroots working with small-holders; to the regional level supporting individual IARCs where it has been and continues to be a key sponsor of applied research; to the global level where it is working with the CGIAR and FAO in pursuit of making the overall system more efficient.²¹⁵

The head of the Foundation's agricultural program Sam Dryden has expressed the view that for the most part, the cuts to agriculture-related overseas development aid which occurred in

²¹³ Anonymous interviewee 31, November 22, 2010.

²¹⁴ Interview with Gordon Conway, February 3, 2011.

²¹⁵ Anonymous interviewee 29, July 20, 2011.

the 1980s and 1990s as part of a more general commitment to financial reform via austerity was very preventable; and while not the fault of any one organization, it is illustrative of a lack of collective political foresight and will.²¹⁶ Yet not only has BMGF reinvigorated government's interest in agriculture, it has also provided opportunities for firms to increase their involvement in efforts to strengthen agricultural sectors and food security within the world's poorest states. That corporate participation in collective action focused on meeting the needs of the world's poorest people is necessary, is part of the knowledge structure being advanced by BMGF in global agricultural development. For this reason, the motivations behind its entry in the agricultural domain continue to be questioned by those resisting the rise of corporate power in the global food system.

In conclusion, BMGF's efforts to re-engage Northern governments in agricultural development illustrate it is not simply an unquestioning aid to states, which would be consistent with the purpose of private Foundations as perceived by the liberal lens. Yet this advocacy for re-engagement and push for a change in policies (e.g. trade) deemed damaging to the interests of developing countries also demonstrates that it is not simply a reinforcer of the status quo, as the critical lens would suggest. Less than a decade old, it is simply too early to draw any firm conclusion as to the long-term significance of BMGF in the governance of global agricultural development.

²¹⁶ Interview with Sam Dryden, July 20, 2011.

Chapter 8: Conclusion

8.1 Summary of the Main Arguments

The Rockefeller Foundation (RF) and Bill and Melinda Gates Foundation (BMGF) have been largely portrayed by critical scholars as members of the transnational capitalist elite working to advance the interests of their peers, and by liberal scholars as mere aids of interstate cooperation. However, neither of these lenses has sufficiently considered the social constructivist position that knowledge construction can, in and of itself, be a vehicle for autonomous agency in world politics. I argue in this dissertation that the basis of RF and BMGF's longstanding influence over how responses to public health and agricultural challenges have been organized lies in their design and advancement of knowledge structures intended to increase access to public goods that accommodate the expressed preferences of dominant states in the contexts where they seek to catalyze change.

Critical perspectives have made valuable contributions to the study of how RF and BMGF influence outcomes in world politics. The first generation of critical scholars were the first to demonstrate that by merely advancing ideas, RF was a powerful transnational actor.¹ The second generation has shown how this ideational influence has helped to blur the line between public and private roles and responsibilities in collective action related to public health and agricultural development.²

Moreover the collection of critical perspectives examining RF and BMGF agency also serve to illustrate that much of what has been produced on the subject of norms currently shaping

¹ For example, see Bruce Jennings, *Foundations of International Agricultural Research: Science and Politics in Mexican Agriculture* (Boulder: Westview Press, 1988); Marcos Cueto, "Visions of Science and Development: The Rockefeller Foundation's Latin American Surveys of the 1920s," in *Missionaries of Science: the Rockefeller Foundation and Latin America*, ed., Marcos Cueto (Bloomington: Indiana University Press, 1994), 1-22.

² For example, see Eric Holt-Gimenez, Miguel A. Altieri, and Peter Rosset, "Ten Reasons Why the Rockefeller and the Bill and Melinda Gates Foundation's Alliance for Another Green Revolution Will Not Solve the Problems of Poverty and Hunger in Sub-Saharan Africa," *Food First Policy Brief* no. 12 (October 2006): 1-11; David McCoy and Lindsey McGoey. "Global Health and the Gates Foundation: In Perspective," in *Partnerships and Foundations in Global Health Governance* (New York: Palgrave Macmillan, 2011).

the world order brought forth by non-state actors,³ has in fact come from scholars working outside of the International Relations (IR) mainstream. While perhaps not acknowledged by the IR community, this early critical literature nonetheless foreshadowed not only the explosion of scholarship on non-state actors involved in the governance of domains long exclusively associated state stewardship,⁴ but also the debates related to how global collective goods problems are most legitimately addressed.⁵

Finally, there is evidence that a number of critical scholars' charges and concerns are well founded. BMGF's preference of funding research related to particular diseases is, for example, having a skewing effect on both overseas development assistance and research trajectories, for their funding preferences have not always reflected the burden of disease in the low-income countries where their efforts are focused.⁶

However, the evidence presented in this dissertation does not support the viewpoint, espoused by some contemporary critical scholars of global governance,⁷ that as the architects of many of the large global health partnerships in existence today, RF and BMGF's "framing" of health problems and solutions lend credence to the neo-liberal worldview. Contemporary global health governance scholars Simon Rushton and Owain Williams have argued for example that with some key exceptions – the World Health Organization (WHO) crafting the International Health Regulations and Framework Convention on Tobacco Control – both the direct (e.g. the Global Alliance for Vaccines and Immunization (GAVI) and President's Emergency Plan for AIDS Relief (PEPFAR)) and indirect (e.g. WTO rules)

³ For example see Peter Haas, "Introduction: Epistemic Communities and International Policy Coordination," *International Organization* 46, no. 1 (1992): 1-35; Susan Strange, *The Retreat of the State: The Diffusion of Power in the World Economy* (Cambridge: Cambridge University Press, 1996); and Martha Finnemore and Kathryn Sikkink, "International Norm Dynamics and Political Change," *International Organization* 52, no.4 (1998): 887-917.

⁴ For example see Rodey Bruce Hall and Thomas J. Biersteker, *The Emergence of Private Authority in Global Governance* (Cambridge: Cambridge University Press, 2002); Robert Falkner, "Private Environmental Governance and International Relations: Exploring the Links," *Global Environmental Politics* 3, no. 2 (2003): 72-87

⁵ For example see John G. Ruggie, *Constructing the World Polity: Essays on International Institutionalization* (New York: Routledge, 1998); Alice Ba and Matthew Hoffmann, eds., *Contending Perspectives on Global Governance* (New York: Routledge, 2005); and Klaus Dingwerth and Philip Pattberg, "Global Governance as a Perspective on World Politics," *Global Governance* 12, no. 2 (2006): 185-203.

⁶ Jeremy Shiffman, "Donor Funding Priorities for Communicable Disease Control in the Developing World," *Health Policy and Planning* 21, no. 6 (2006): 411-420.

⁷ See for example Simon Rushton and Owain D. Williams, "Frames, Paradigms and Power: Global Health Policy-Making under Neo-liberalism," *Global Society* 26, no2 (2012): 147-167

instruments of global health policy that the Foundations have either played a role in formulating or tacitly supported are informed or shaped by the core ideas and assumptions of neo-liberalism.⁸ While the authors do not self-identify as critical scholars, their views are entirely consistent with the historical materialist perspective of global governance posited by the likes of Henk Overbeek, who suggests that global governance is merely attempts by the transnational managerial class to reproduce and re-legitimize neo-liberalism on a global scale through legal means.⁹

Yet from the progressive era to the present, RF has steadily sought to catalyze states' investment in public sectors as a means of strengthening public health and agricultural systems, particularly so in developing countries. The motivations for doing so may be contested, but such contestation does not diminish the fact that the Foundation has been a steadfast supporter of public sector entities seeking to ensure access to public goods, and this has remained the case despite the diffusion of neo-liberal ideology.

RF's emphasis on partnerships beginning in the early 1990s was an attempt to compensate for the adverse impacts of applying neo-liberal ideology to public policy and the ensuing atrophying of government's capacities to produce needed public goods. The Foundation's attempts to strengthen public sector capacity by tapping the resources of industry are incongruent with the ideas and assumptions informing neo-liberalism. What RF most certainly does have is a track record of successfully adapting its knowledge structures to the realities of larger changes to global political economy beyond its control. This capacity for adaptation in governance has been the basis of its sustained influence over how governments organize their responses to public health and agricultural challenges.

While BMGF lacks RF's legacy of directly investing in public sector strengthening, it has nonetheless demonstrated a similar capacity—embodied in the form of GAVI—to catalyze innovation in global governance in the neo-liberal era that has been engineered to compensate for reductions in public sector capacity created by policy informed by neo-

⁸ Rushton and Williams, "Frames, Paradigms and Power."

⁹ Henk Overbeek, "Class, Hegemony and Global Governance: a Historical Materialist Perspective," in *Contending Perspectives on Global Governance: Coherence, Contestation, and World Order*, eds., Matthew Hoffmann and Alice Ba (London: Routledge, 2005), 47.

liberal ideology. The Foundation's ability to shift the behavior of states and firms driving and benefiting from inequities in the global political economy in ways which increase access to public goods for marginalized populations undermines suggestions that RF and BMGF are conservative actor seeking to buttress support for the dominant world order through philanthropic distraction.

This dissertation lends support to the liberal view that RF and BMGF have carved out a niche for themselves in world affairs as "honest brokers" capable of facilitating institutional innovation in global governance, geared towards the development of novel strategies and mechanisms focused on the production and dissemination of public goods intended for historically marginalized populations. If BMGF is conceptualized as an extension of the RF, then for a century, these two unique actors have demonstrated an ability to bring needed resources to bear on issues adversely affecting large segments of the world's poorest people. More importantly, the institutionalization of RF and BMGF strategies has led to fundamental changes in how governments have organized their individual and collective responses to public health and agricultural challenges experienced by developing countries.

In summary, critical analysis of RF and BMGF agency is important in the sense that it brings necessary scrutiny to the initiatives of transnational actors, who compared to public sector authorities, operate with limited transparency and accountability. However it has nonetheless obscured the comparative advantage of these two private Foundations as agents of change in global governance, thus overlooking what exactly they do and how their anomalous attributes allow them to do so.

Framing RF and BMGF as inherently conservative actors who actively resist structural change is inconsistent with their longstanding role as agents of institutional innovation. These two organizations have in fact been the drivers of some of the most novel approaches to the governance of global health and agricultural development ever embraced by the society of states. Their current capacity to shape collective action oriented to addressing discrete and agricultural challenges is merely a continuum of a larger legacy as illuminators of state and market failures constraining access across the global South to needed public goods and as facilitators of innovation in science and governance intended to close those gaps.

Moreover by accepting power inequities in world politics and readily adapting to the constraints and opportunities afforded by different world orders, RF and BMGF have attained policy influence which they used to embed ideas previously absent from policy arenas, which have normative implications for global governance. As has been shown in detail in chapters 4 through 7, in the neoliberal era the Foundations have illuminated through Public-Private Partnership (PPPs) how firms can aid public authorities to reduce socio-economic disparities. While far from perfect, RF and BMGF bring to global governance an independent thinking, pioneering spirit, and long-term perspectives largely free of political pressure, making them well placed to facilitate innovation.¹⁰

In this vein, I argue that RF and BMGF's agency serves to illustrate that to institutionalize knowledge structures of global governance, non-state actors must adapt their knowledge structures and accommodate - or at least not be seen as challenging or undermining - the preferences of the prevailing world order's most powerful states. While operating at the country level in the immediate post-colonial era, RF was focused primarily on accommodating the expressed preferences of developing country governments. Yet at the international level, the dominant power that RF has had to work with since the post-war era has been the United States. For RF or now BMGF to openly contest the preferences of the United States would place the Foundations at risk of losing the support of those with the capacity to impede the institutionalization of their ideas.

RF's influence in global health governance has endured for a century because of the Foundation's ability and willingness to adapt its long-term organizational goals to the constraints and opportunities presented by the changing preferences of the world's dominant states. Involving firms in attempts to resolve what had previously been accepted as public sector problems was an adaptation to the parameters of neo-liberal era. BMGF has built itself around this paradigm. In demonstrating how RF and BMGF's agency has centered on adapting their knowledge structures to accommodate changes in the distribution of global political and economic power, I argue, my findings build on existing theories of

¹⁰ John Wyn Owen, Graham Lister, and Sally Stansfield, "The Role of Foundations in Global Governance for Health," in *Making Sense of Global Health Governance: A Policy Perspective*, eds., Kent Buse, Wolfgang Hein and Nick Drager (Basingstoke: Palgrave Macmillan, 2009), 235.

how knowledge can be a source of power in world politics. These include both functionalism, which articulated how specialized knowledge alone may serve as the basis of power in international relations, and more importantly, neo-functionalism, which illustrated that such technocratic influence was not limited to International Organizations (IOs).

Both Foundations lend credence to neo-functionalism in their common commitment to Science-Enabled Innovation (SEI), thereby demonstrating for would-be adopters how science and resultant technology can provide solutions to longstanding challenges perceived to be jeopardizing public health and food security, and constraining economic development. SEI has been key to state acceptance of RF knowledge structures, and this was particularly true for states emerging from the clutches of colonialism seeking to modernize their public health and agricultural systems. Credibility attained by scientific prowess can be explained in part by the deep faith in the power of science and the appeal of technology to improve humanity's lot, which transcends cultures in the modern world. Demonstrating evidence of the effectiveness of science and technology remains integral to the Foundation's discursive power, meaning their ability to shape the dominant discourse related to the determinants of and solutions to disease, weak agricultural sectors, and food insecurity in developing countries.

Moreover, this study draws heavily from the epistemic communities concept, which casts light on how disciplinary training matters in establishing world-views and normative beliefs. I also draw inspiration from Karen Litfin, who clearly articulated that the discursive nature of knowledge means that particular ways of understanding problems gives rise to biases for particular solutions, which when combined with agenda setting power leads to other ways of conceptualizing and responding to complex problems being excluded from the decision-making process.

Historically, participating in the development of post-secondary infrastructure was integral to RF's success in building epistemic communities in public health and agriculture within the countries where it operated.¹¹ RF was instrumental in facilitating for states the training of

¹¹ James S. Coleman and David Court, *University Development in the Third World: the Rockefeller Foundation Experience* (New York: Pergamon Press, 1993).

communities of experts in select scientific disciplines, such as agronomy, epidemiology and molecular biology. By virtue of their training, these communities approached health and agricultural problems in ways that reflected and reinforced the dominant norms and ideas guiding the foundation's work. These country-level epistemic expansions provided RF instrumental power, in that through training the Foundation embedded epistemic communities into policy-making arenas.

A common pedagogical background also meant these communities of experts were receptive to the Foundation's advocacy for specific institutional reforms and efforts to establish new mechanisms intended to facilitate collective action related to strengthening public health and agricultural capacity in developing countries. Consequently, the construction and support of epistemic communities heightened the credibility of RF's positions and their lobby influence within national and international public policy arenas. Moreover, it has also allowed them to orient research trajectories directed at solving said problems and to establish institutional legacies such as the Consultative Group on International Agricultural Research (CGIAR) managed by members of those communities within which those same specific ideas and approaches are embedded and perpetuated. The CGIAR is one of the few examples whereby RF attained structural power by proxy, in that at the explicit request of states, its technocratic leadership was delegated authority to inform the rules and operational frameworks governing participation in an albeit voluntary system.

Such structural power-by proxy illustrates, however, that while knowledge construction is integral to RF and BMGF's status as discrete actors in world affairs, Peter Haas's argument that epistemic communities are unable to institutionalize their normative enterprises autonomously applies equally to RF and BMGF.¹² To institutionalize and translate the ideas and norms they espouse, states must invite the Foundations to retool the institutional machinery, as occurred in the formation of CGIAR. Institutionalizing ideas and normative enterprises at the global level therefore requires convincing those controlling the levers of power to buy into the utility of the proposed ideas.

¹² Peter Haas, "Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control," *International Organization* 43, no. 3 (1989): 377-403; Ruggie, *Constructing the World Polity*.

To attain this commitment, both RF and BMGF have proven to be masters of private diplomacy, which refers to the convening of informal, private dialogue between actors whose individual receptivity and cooperative ability has been deemed essential for the successful institutionalization of the Foundation's strategies.

The most recent example of the Foundation's influence via knowledge power is the ascent of the PPP paradigm in public health and agricultural development. RF and BMGF have been a driving force behind PPPs becoming the dominant approach in the neo-liberal era for creating new technologies in these two arenas, intended to benefit the populations of the world's poorest counties.¹³ Their effectiveness in selling PPPs as a form of global governance has centred on illuminating state-market gaps, showcasing how science and technology can overcome problems long deemed intractable, reducing financial risks for firms through subsidizing research and development (R&D) costs and negotiating between public and private actors across sectoral boundaries.¹⁴ Through Product Development Partnerships (PDPs) such as the International AIDS Vaccine Initiative (IAVI) and Informal Global Alliances (IGAs) such GAVI, the Foundations have ensured that functional strategies and institutional frameworks exist to provide public goods to the world's poor when public sector authorities mandated to perform this role have fallen short. Moreover, through their support for organizations such as the African Agricultural Technology Foundation (AATF) focused on facilitating technology transfer, RF and BMGF are illuminating structural inequities stemming from the unequal global distribution of power, which Northern states and firms have created and benefited from. Without explicitly chastising, the Foundations have provided Northern states, pharmaceutical and agrochemical companies and IOs with frameworks that work to compensate for each of their individual shortcomings as global governors.

One enduring criticism of both Foundations is that their chosen emphasis on facilitating innovation in science and technology serves to distract from larger structural determinants of

¹³ Michael Moran and Michael A. Stevenson, "Partnerships and the MDGs: Challenges of Reforming Global Health Governance," in *The Handbook of Global Health Policy*, eds., Garrett Brown, Gavin Yamey, and Sarah Wamala. Wiley-Blackwell, Forthcoming 2014).

¹⁴ Michael Moran, "Philanthropic Foundations and Global Health Partnership Formation: The Rockefeller Foundation and IAVI," in *Health for Some: The Political Economy of Global Health Governance*, eds., Sandra MacLean, Sherri Brown, and Pieter Fourie (New York: Palgrave MacMillan, 2009), 129.

the same problems they purportedly to want to solve. Yet end-products such as the yellow fever vaccine and submergence tolerant rice varieties serve to illustrate that advances in science and technology have played and will continue to play an important roles in strengthening public health and food security across the global South.

The Foundations' eagerness to collaborate with, as opposed to contest, Northern states and Multinational Corporations (MNCs) that have engineered and benefited from structural inequality in pursuit of their goals has also attracted criticism. Yet such collaboration does not mean the two Foundations are conservative actors seeking to impede transformative change in the global political economy.

PPPs have been well received by Northern governments guided by neo-liberal ideology because the model functioned in the face of deep cuts to public sector research capacity and accommodated their expressed volition for private sector involvement in the development and distribution of public goods. Indeed the PDP model emerged as a form of global governance to compensate for the reduction in public sector capacity driven by neo-liberal ideology. However, while the promotion of governance innovation intended to benefit marginalized populations is integral to the Foundations' character as political actors, with few exceptions, activism (i.e. naming and shaming) is not.

Consequently, through the PPP, the Foundations have produced a general knowledge structure that accommodates the preferences of those actors possessing the means to block the uptake of their strategies for increasing marginalized populations' access to new public goods such as essential medicines. Through PDPs such as IAVI and AATF, and informal global alliances such as GAVI and Alliance for a Green Revolution in Africa (AGRA), the Foundations have shown that institutional innovation benefiting historically marginalized populations can occur in the absence of changes to the global power structure.

In any given context, the distribution of political and economic power is always unequally distributed. RF's longevity as an actor of influence in global governance lends credence to the argument that if an actor can successfully adapt its strategies to be sufficiently palatable

to the dominant political establishment, they will be well positioned to affect change in the norms and institutions guiding that system.

The institutional frameworks and governance strategies advanced by the Foundation have never been contested the legitimacy of the dominant liberal economic paradigm. They have worked within it, without a longstanding end goal—that is, enabling the provision of public goods to historically impoverished and marginalized populations—being compromised. By not contesting the legitimacy of the overall system, RF has been afforded opportunities to affect change within it.

As knowledge structures guiding actors' behaviors, RF and BMGF have used PPPs in an attempt to embed new norms within policy making arenas, which has led to behavioral changes among participants. Pharmaceutical and biotechnology firms are now far more willing to waive licensing fees or royalties for those who seek to duplicate their products or employ patented molecular tools and processes for the benefit of the world's marginalized than they were fifteen years ago. PDPs, I argue, have created the expectation for firms to be more receptive to the needs to the world's poor. Whether PDPs are catalyzing a shift in corporate social responsibility (CSR) from mere charity towards corporate recognition of public health and food security as fundamental human rights is by no means clear. What is clear, however, is that through the likes of the Public Intellectual Property Resource for Agriculture (PIPRA), Africa Harvest Biotech Foundation International (AHBF) and AATF, the Foundations have succeeded in loosening the reigns currently controlling access to proprietary knowledge that is constraining science-enabled innovative capacity across the global South.

RF has been a trailblazer in creating approaches to the governance of global health and agricultural development, although its strategies for advancing its ideas have changed over time in response to larger changes in the global political economy. Its advancement of the PPP approach reflects its willingness to acknowledge and accommodate the unique capacities and needs of those various actors whose cooperation is required to achieve pressing end goals. While inspired and in many ways modeled after RF, BMGF departs from its ideational and institutional ancestor by exhibiting a reservation for investing directly

in strengthening public sector capacity or establishing operational programs. Moreover the degree to which BMGF is willing to engage with firms goes beyond RF's adaptation to the rise of corporate power resulting from the diffusion of neo-liberal ideology. BMGF has built itself around the PPP paradigm on the grounds that it wants to take risks and invest in technological innovation that has the potential for big payoffs as opposed to investing in what is already known to work and collaborating with industry factors prominently in strategies to achieve these goals. This means the BMGF is more closely aligned with the private sector than RF ever has been.

RF and BMGF's ability to influence collective action revolves around the framing of debates and persuading states to embrace particular norms and ideas, and both Foundations have provided very unique platforms for small groups of individuals to advance their ideas and shape public policy and collective action in the domains of public health and agricultural development. Without overtly seeking to alter the overall distribution of political and economic power, RF and BMGF have brought a dynamism to the process of constructing functional mechanisms of global health governance, which has been especially apparent when the capacities of WHO and the Food and Agricultural Organization of the United Nations (FAO) have been diminished by financial neglect and political isolation.

In a mere fifteen years, the PDP paradigm has become the dominant global approach to facilitating low-income countries' access to proprietary technologies in pursuit of strengthening public health and agriculture. RF and BMGF have been the catalysts of multiple global PDPs, which have effectively bridged public and private sector gaps to develop and distribute new technologies to millions across the global South in need of them. Moreover, exemplified by GAVI and AGRA, RF and BMGF have been architects of IGAs coordinating and sustaining the activities of often very incongruent actors in pursuit of common goals. RF and BMGF-driven partnership approach to facilitating access to public goods which both the PDP and IGA embody began in public health but is now embedded across the entire development spectrum: from agriculture through AGRA, to water resource management (Global Water Partnership), to environment and climate change (the Clean Development Mechanism), to gender empowerment (the One Woman Initiative). Partnerships are now the master ideational concept underpinning the Millennium

Development Goals, which reinforces the perceived success and political support for PPPs as an institutional innovation in global governance.¹⁵ Consequently, RF and BMGF are reshaping the way we should think about international politics; however this is entirely consistent with RF's historical role as an agent of change.

8.2 Three implications of states embrace of PPPs in the governance of global public health and agricultural development

The first twenty years of the neo-liberal era (from 1980 to 2000) was characterized by (i) dwindling levels of bilateral and multilateral aid; (ii) diminished public sector capacity in countries subject to structural adjustment programs; (iii) explicit preferences expressed by Northern states for bringing market solutions to bear on historically public sector challenges; and (iv) continued market apathy for the needs of the poor. In this context RF and BMGF have clearly understood both the utility of and political receptivity for the PPP paradigm in global public health and agricultural development.

Here I examine three implications of states' broad embrace of the partnership paradigm, which has functioned as RF and BMGF knowledge structure intended to buttress public sector capacity and overcome market failures in the neo-liberal era.

First, the spread in state support for PPPs across the development spectrum has resulted in the creation of new global approaches for developing, financing, producing, and disseminating public goods in developing countries. The proliferation of PPPs has heightened coordination, legitimacy and accountability challenges in global governance, and for their willingness to work outside of the UN system to achieve their goals, the Foundations have in recent years been accused of undermining the authority of IOs. Yet by developing and lobbying for the embrace of alternative governance mechanisms outside of traditional multilateral arenas, are RF and BMGF undermining the legitimacy of WHO and FAO, or are they compensating for their deficiencies? I argue that the decline of IO authority in the neoliberal era is the result of political and fiscal constraints that have been imposed on IOs by donor states, as well as by IOs' own antiquated governance structures

¹⁵ Moran and Stevenson, "Partnerships and the MDGs."

that limit their ability to cooperate with non-state actors in pursuit of common goals. Through PPPs, RF and BMGF have demonstrated a willingness to help both WHO and FAO perform their intended functions, but are also willing and able to innovate around them if they feel it is necessary to do so.

Second, the embrace of PPPs has meant a resurgence in support for collective action emphasizing technological solutions to problems with often deep political determinants. Technological innovation has been and continues to be critical to strengthening public health, agricultural productivity, and food security and this is where the Foundations have been effective as catalysts. Through PPPs, RF and BMGF have facilitated the unlocking of privately held Intellectual Property (IP) for the intended benefit of the public good without radical changes having to be made to international trade law. In this regard, RF and BMGF have effectively illuminated a key structural impediment to achieving equity in global health and food security, even if they alone cannot overcome it. Nevertheless, their capacity to catalyze normative shifts and organizational change in global governance is limited to domains where they have exhibited expertise. Moreover, while significant, trade-related Intellectual Property Rights (IPR) are merely one example of structural inequity adversely affecting the world's poor.

Third, the PPP paradigm has provided firms with opportunities to become formally involved in the development and management of institutional frameworks focused on strengthening public health, agricultural capacity and food security in low and middle-income countries. Consequently, RF and BMGF have faced criticisms of inadvertently cementing structural inequities by reinforcing the power of MNCs. However, through the partnership paradigm, RF and BMGF are illuminating how firms can help public authorities reduce socio-economic disparities. In doing so, the Foundations have provided both proponents and detractors of global capitalism with a new way of conceptualizing the role of business in society.

8.21 Traditional IOs are facing pressure to recognize the unique skills of a diverse array of actors

In the neoliberal era, the implementation of RF and BMGF ideas and those of their institutional progeny have occurred through partnerships with other organizations, including but certainly not limited to traditional IOs. The network structure through which each foundation operates to advance their goals poses a tremendous challenge for those determined to hold either foundation accountable for any misguided assumptions or adverse effects of their initiatives.

Since IO policy positions are representative of the collective wishes of the society of states, they will always possess a degree of legitimacy that is unattainable to a private organization. While the Foundations' positions are determined by a small group of individuals, WHO for example has a legal responsibility to deliver on a range of health issues affecting its member states.¹⁶ Consequently, red flags have been raised that PPPs are functioning as parallel decision making bodies to IOs: undermining the legitimate authority of the likes of WHO and FAO and muddying the waters of accountability in global governance.¹⁷ The evidence attained in my research on RF and BMGF agency demonstrates, however, that the proliferation of PPPs in global health and agricultural development are a reflection of public sectors being weakened by the embrace and/or imposition of neoliberal ideology to the point that they are no longer able to fulfill their mandates autonomously. This has been exacerbated by the governance structures of IOs which were forged in the state-centric world of the 1940s, limiting their ability to engage with the increasing number of non-state actors seeking to strengthen public health and agricultural capacity in poor countries.

As noted by one former senior WHO official, the basic weakness of both WHO and FAO's governance structures is that they were set up as policy making entities that must get approval from member states, which are the sole constituency to which they are accountable. This of course does not reflect the multiple actors involved resolving global health and

¹⁶ Anonymous interviewee 13, March 1, 2011.

¹⁷ See for example: Benedicte Bull, Martin Boas and Desmond McNeill, "Private Sector Influence in the Multilateral System," *Global Governance* 10, no.4 (2004). See also: McCoy, David, Gayatri Kumbhavi, Jinesh Patel, and Akish Luintel. "The Bill & Melinda Gates Foundation's Grant-Making Programme for Global Health." *The Lancet* 373, no. 9675 (2009): 1645-1653.

agricultural challenges, which under WHO and FAO rules may participate in or observe policy discussions but lack the power to make (i.e. vote) on actual policy.¹⁸

The structure of IOs acting as an impediment to collective action has been particularly evident in the domain of global public health. Within WHO constitution, according to another former WHO official, one relic of the state-centric world of 1948 is the clause that allows the organization to take over responsibility for issues it believes it is best suited to oversee.¹⁹ Such thinking reinforces the relevance of the single authority notion, and there remains strong support, among proponents of WHO,²⁰ for ensuring that organization maintains its authority to direct and coordinate the global flow of ideas and resources intended to respond to pressing health challenges.

Yet at present the fixation on a single global health leader may not be feasible or desirable, given that health expertise is now so broadly distributed. As noted by the same aforementioned ex-WHO official, when IOs were created, they were one of the only mechanisms that existed to coordinate activities across borders in pursuit of the common good. Since that time, a multitude of firms and NGOs have proven themselves to be highly adept in this role. Yet IOs such as WHO were not designed to collaborate constructively with the private sector or civil society, and despite repeated calls for them to develop this capacity, whether they can transcend this historic inability remains to be seen.²¹

The argument that IOs were not designed to work with non-state actors as equals on issues of collective action is equally true in agricultural development as it is in health. For many in the development community, there is no loss of authority on the part of FAO arising from the proliferation of partnerships because the organization is seen as having never lived up to its full potential.²² Over the last decade, the organization has faced a barrage of criticism

¹⁸ Anonymous interviewee 12, November 24, 2010.

¹⁹ Anonymous interviewee 25 August 16, 2011.

²⁰ See for example Gill Walt, Neil Spicer, and Kent Buse, "Mapping the Global Health Architecture," in *Making Sense of Global Health Governance: A Policy Perspective*, eds., Kent Buse, Wolfgang Hein and Nick Drager (Basingstoke: Palgrave Macmillan, 2009), 47-71

²¹ Anonymous interviewee 25, August 16, 2011.

²² Anonymous interviewee 3, December 6, 2010.

from donor states over a perceived lack of transparency and accountability,²³ and framed as an inefficient bureaucracy lacking strategic focus at the country level.²⁴

The CGIAR system, for example, was created because FAO was not designed to deliver science and technology products to developing countries,²⁵ and in the current era, Prabu Pinagli's department (statistics) within BMGF is perceived to be helping FAO fulfill one of its core duties. Furthermore, according to Catherine Bertini, with Purchase 4 Progress (P4P), the work of BMGF has been credited with helping revitalize the role of the World Food Programme (WFP), which traditionally has been limited to emergency aid.²⁶

WHO in contrast was designed to be a technical authority and disseminator of information but was not intended for ad-hoc work. "Mission-creep" as opposed to an inability to fulfill core responsibilities, in the eyes of one former high-ranking official of the organization, is what is undermining its legitimacy as a leading body.²⁷ In the world of 1948 when the organization was conceived and RF was preparing to cede its own authority to this new entity, transnational not-for-profit organizations like CARE did not exist, nor did health focused MNCs resemble their modern day analogues. Today, BMGF's total annual spending on health is approaching that of the typical WHO budget, yet the governance structure of the latter is blind to the former as it is to other non-state actors, and this is seen by one former President of the Global Health Council as having a huge adverse impact on coordination.²⁸

WHO continues to play an important role in convening and consulting health expertise. The key advantages for WHO in global health governance and what will likely be preserved is the World Health Assembly (WHA) structure which provides sole authority for WHO

²³ Christoffersen, Leif E., Bezanson, Keith., Lela, Ume., Davis, Michael., del Castillo, Carlos Perez., and Awori, Thelma. *The Challenge of Renewal. An Independent External Evaluation of the Food and Agriculture Organization (FAO)*. Rome: FAO, 2007.

²⁴ Department For International Development, *Multilateral Aid Review: Assessment for the Food and Agriculture Organisation of the United Nations (FAO)* (London: DFID, 2011).

²⁵ Alex F. McCalla, "FAO, Research and CGIAR," *Working Paper* no. 07-005 (Davis: Department of Agricultural and Resource Economics University of California, 2007), 3.

²⁶ Interview with Catherine Bertini, January 26, 2011.

²⁷ Anonymous interviewee 25, August 16, 2011.

²⁸ Anonymous interviewee 6, June 23, 2011.

setting global standards, and the organization's direct connection to national ministries of health. Given the push for evidence-informed governance, WHO needs to be able to parlay those skills into bringing harmonization in approaches to a very diverse field, and this is where it shows an inability to adapt to a changed world.²⁹ Due to its limited resources, it is incapable of duplicating such diverse expertise. Moreover WHO cannot ignore the multiple non-state actors collaborating effectively through partnerships. Hence there is pressure on the organization, and indeed on all UN agencies, to adapt and allow other organizations to have input in ways that compliment what states and IOs do best.³⁰

As private actors, the legitimacy of RF and BMGF's claims of acting on behalf of the poor and marginalized will be questioned. They, like other non-state actors such as Médecins Sans Frontières (MSF) and Save the Children, have not been elected to perform the roles they have undertaken. Instead, they perceived gaps and moved in to fill them. Every type of actor needs to ask questions about whom they are representing and be open to feedback and change accordingly.³¹ The downside of philanthropic agency, notes William Foege, is that the more money a Foundation has, the less likely current and aspiring grantees will challenge their ideas, which makes it easy to lose sight of what is correct, what is flawed, and where changes need to be made. To prevent this from occurring, the boards of the Foundations must be truly reflective of the diversity that exists in the issues the Foundations are involved in, be capable of critical reflection, and have no stake in the future of any one Foundation initiative.³²

However, the legitimacy of RF and BMGF has never been derived from electoral processes but instead from whether their ideas have proven effective over time.³³ In this regard PPPs such as IAVI and GAVI, which have been effective catalysts for collaboration in the development and delivery of health technologies intended specifically for historically marginalized populations in the global South, have legitimized both Foundations roles as innovators in global health governance.

²⁹ Anonymous interviewee 12 November 24, 2010; Anonymous interviewee 6, June 23, 2011; Anonymous interviewee 15, January 18, 2011.

³⁰ Anonymous interviewee 25 August 16, 2011; Anonymous interviewee 6, June 23, 2011.

³¹ Anonymous interviewee 6 June 23, 2011.

³² Interview with William Foege, August 18, 2011.

³³ Anonymous interviewee 25, August 16, 2011.

What the embrace of PPPs in global health and agricultural development illustrate is that the world has changed and UNSpecialized agencies, largely because of their design, have been slow to catch up. RF and BMGF have both supported WHO and FAO in their work. Yet the Foundations have also demonstrated a willingness to innovate around them, by developing informal mechanisms outside of the international system, if they feel doing so is justified. Any loss in legitimacy experienced by WHO and FAO in the neo-liberal era therefore stems not from RF or BMGF's ability to advance PPPs as an approach to collective action, but from their own inability to adapt to political and fiscal constraints on their capacities that have been imposed by their political masters.

8.22 The narrative of technology as a path to progressive change is now deeply embedded in mechanisms of global governance focused on strengthening public health and agricultural capacity

Historically RF demonstrated an affinity for science-enabled innovation and a commitment to public sector capacity building in science, which has been reflected in the governance mechanisms it helped forge. The International Agricultural Research Centres (IARCs) of the CGIAR, for example, were not constructed to address explicitly political determinants of food insecurity. Yet they have nonetheless produced tangible benefits in the face of them. In the context of Sub-Saharan Africa where a lack of political will to strengthen agricultural systems persists, the Institute of Tropical Agriculture (IITA) has, for example, proved instrumental in ensuring continued access to cassava, which is the continent's most important crop.³⁴

More recently, BMGF's propensity towards promoting technological innovation has been criticized for skewing the global research and governance trajectories in public health.³⁵ BMGF priorities are set by a small group of individuals, yet this is perfectly normal for a private philanthropic entity. It is legitimately entitled to its own particular vision of global health and how it can be attained so long as long as no laws are broken. The problem for critics is that its purchasing power relative to the diminished or diminishing purchasing

³⁴ Anonymous interviewee 18, February 10, 2011.

³⁵ For example see David McCoy, Gayatri Kumbhavi, Jinesh Patel, and Akish Luintel, "The Bill & Melinda Gates Foundation's Grant-Making Programme for Global Health," *The Lancet* 373, no. 9675 (2009): 1645-1653.

power of other private and more importantly public actors constitutes structural power, in that the Foundation is driving research agendas, which begs questions of relativity and the disproportionate influence of a private entity on the public good, or what a public good actually is and how it can be attained.³⁶ The primary impediment to BMGF's prioritizing health systems strengthening reflects Bill Gates' fascination with all things molecular, his preference for subsidizing the development of tangible advances in technology and his belief in the innovative capacity of the private sector operating in free markets. With the exception of Gordon Perkin (whose initiatives were allegedly increasingly out of sync with Gates' own interests),³⁷ the leadership of the Global Health Program (Richard Klausner, Tachi Yamada and Trevor Mundel) has been reflective of these technological, biomedical and entrepreneurial biases.

BMGF has built itself around the PPP paradigm, and from an economic standpoint there is evidence to support assertions that the Foundation focuses too heavily on product development.³⁸ The global access to medicines movement has also inadvertently though predictably had a crowding out effect on other options, as only so much money can be spent on public health and pharmaceuticals—which even at greatly reduced prices are quite expensive.³⁹ This does not diminish the fact that one of BMGF's proven strengths is its ability to focus considerable material resources on specific areas, most notably the development and delivery of vaccines. Its willingness to invest heavily and early in GAVI is both a testament of this and was an important incentive that pulled the various prospective partners towards GAVI, which RF-led Children's Vaccine Initiative (CVI) did not enjoy. Having said that, GAVI has worked because it is truly multi-sectoral in nature, and all parties were represented equally from its inception. Previously, the public sector organizations had banded together in uneasy alliances to force the hands of the private sector or developing countries, and BMGF was the catalyst for organizational change in this regard.⁴⁰

³⁶ Anonymous interviewee 5, June 30, 2011.

³⁷ Anonymous interviewee 25, August 16, 2011.

³⁸ Jef. L. Leroy, Jean-Pierre Habicht, Gretal Peltó and Stefano M. Bertozzi, "Current Priorities in Health Research Funding and Lack of Impact on the Number of Child Deaths Per Year," *American Journal of Public Health* 97, no. 2 (2007): 219–23.

³⁹ Anonymous interviewee 2, January 18, 2011.

⁴⁰ Anonymous interviewee 6, June 23, 2011; William Muraskin, *Crusade to Immunize the World's Children: The Origins of the Bill and Melinda Gates Children's Vaccine Program and the Birth of the Global Alliance for Vaccines and Immunizations* (Los Angeles: USC Marshall BioBusiness Initiative, 2005).

RF and BMGF have been very effective in showing how science and technology matter in public health and agricultural development (although how much and which technologies are most appropriate will always be highly polarized debates). Moreover through private diplomacy, the Foundations have created spaces for Northern states and firms to admit that the international rules governing access to technology is preventing those who stand to benefit from particular technologies most from accessing it. What RF and BMGF-led PPPs focused on product development have effectively illuminated, however, is that proprietary technology, which has relevance for pressing social problems in poor countries, can be made available to those engaged in SEI for the public good, or directly for intended beneficiaries by working in partnership with those firms otherwise preventing such access. In this regard RF and BMGF have effectively illuminated a key structural impediment to achieving equity in global health and agricultural capacity and provided a framework to overcome it.

The reality according to one international expert on pharmaceutical research and development who was involved in the formation and CVI and GAVI is that no company will invest in developing a marketable product without some sort of IP protection. However, according to this individual, there is an alternative to firms having either total or no control over IP in that it can be retained but not applied to people who cannot access the benefits it may confer. The PDP model decreases the financial risk firms would otherwise take so that products can be developed for populations with limited purchasing power. Pharmaceutical companies will usually place their money where returns are highest. If a third party—be it a Foundation, or public entity offers to reduce the risk of their investment through direct subsidization or for example by guaranteeing a minimum profit margin through a commitment in advance to purchase a certain amount of product at a fixed price, it allows those same firms to invest in something they would not invest in because the risk of doing so is markedly reduced.⁴¹ RF and BMGF have been champions of this alternative.

Their instrumental power has been deemed worthwhile on the basis that it is possible to measure the net benefit of PPPs. Global health PDPs, for example, are fulfilling their intended purpose in the sense that new drugs, vaccines and related technologies are being

⁴¹ Anonymous interviewee 27, January 4, 2012.

developed and delivered in response to longstanding state and market failures.⁴² This template is now being extended to agriculture to address general challenges such as drought and more specific threats such as the particularly virulent stem rust, UG 99 (short for Uganda 1999 where and when it was discovered), which is currently a threat to much of the wheat production in Africa and Asia, given there is limited natural resistance to it in existing varieties and its ability to mutate rapidly is undermining attempts to confer resistance.⁴³

RF and BMGF have both chosen to focus on unlocking the potential of science and facilitating marginalized populations' access to resultant technologies. However, by attempting to engage and bring together relevant public, private and civil society at local, regional, as well as inter- and trans- national levels, the Foundations' current approach to public health and development is anything but singular. Protracted and divisive arguments over whether African agricultural productivity can be improved via conventional breeding versus genetic modification for example are likely—from the Foundation's perspectives—viewed as distracting from the primary issue, which is the longstanding wholesale continent-wide neglect of agricultural sectors.

From a macro-economic standpoint, developing countries such as China and Brazil whose overall agricultural productivities have increased over time demonstrate both that indigenous capacity for applied agricultural research is indeed a critical determinant of success. Conversely, a collective failure to invest in the national agricultural capacity of Sub-Saharan countries during the 1950 and 1960s in large part explains its comparatively weaker agricultural sectors. RF and BMGF are evidently cognizant of the fact that simply transplanting technology that worked in India will not address the region's food woes. What is absent across much of Sub-Saharan Africa from a technological standpoint, and where the Foundations have focused their recent efforts, is the capacity to take globally available technology from IARCs and the private sector and adapt it to African needs. This reality underpins RF's advocacy of addressing chronic low-levels of funding at universities and agricultural research institutes, which lack funds for the hiring of faculty and conducting

⁴² Mary Moran, "A Breakthrough in R&D for Neglected Diseases: New Ways to Get the Drugs We Need," *PLOS Medicine*, 2, no. 9 (2005): e302.

⁴³ Anonymous interviewee 29, July 20, 2011.

research, as well as a push on the part of both Foundations for incentives to nurture private sectors to develop and produce local varieties.⁴⁴

All trends are pointing towards the direction that technology oriented partnerships focused on meeting the needs of low-income populations are here to stay. On any issue relevant to this target population, there is a growing gap between public monies and needs. Accordingly, there is a need to identify alternative sources of funding. Through partnerships, private sector money is helping to close those gaps;⁴⁵ however this does not mean that the model is static.

Taking the example of pharmaceuticals, a significant long-term change is that Southern firms are increasingly meeting the needs of their own populations with lower-end costs. As the technological gap between North and South is reduced, it has expected that middle-income country based pharmaceutical firms will increasingly function as the innovators of global product development partnerships. This is due in large part to the economics of scale which allow such firms to produce high volumes at a low cost, as the Serum Institute's new meningococcal vaccine demonstrates,⁴⁶ but also because of changing trends in product demand and the maturation of developing country economies.⁴⁷

Yet the degree to which firms in emerging markets are integrated into global markets is also credited with factoring into their success.⁴⁸ Northern firms are paying much more attention to firms in the South because—as illustrated by Abbott's 2010 purchase of India's Piramal Healthcare Solutions⁴⁹—it is increasingly difficult to make the distinction between a Northern and Southern firm.⁵⁰

⁴⁴ Anonymous interviewee 16, December 9, 2010.

⁴⁵ Anonymous interviewee 6, June 23, 2010.

⁴⁶ Anonymous interviewee 26, December 13, 2010.

⁴⁷ Halla Thorsteinsdottir, C.C. Melon, M. Ray, S. Chakkalackal, M. Li, J.E. Cooper, J. Chadder, T.W. Saenz, M.C. Paula, W. Ke, L. Li, M.A. Madkour, S. Aly, N. El-Nikhely, S. Chaturvedi, V. Konde, A.S. Daar, and Peter Singer, "South-South Entrepreneurial Collaboration in Health Biotechnology," *Nature Biotechnology* 28, no. 5 (2010): 407-16. doi: 10.1038/nbt0510-407

⁴⁸ Bruce Rasmussen, *Innovation and Commercialisation in the Biopharmaceutical Sector: Creating and Capturing Value* (London: Edward Elgar, 2010).

⁴⁹ Bruce Japsen, "Abbott Buys Unit of India's Piramal Healthcare," *The Chicago Tribune* (May 21, 2010).

⁵⁰ Anonymous interviewee 6, June 23, 2011.

Moreover, new approaches to product financing—notably the concept of advance purchase—are ensuring the continuing relevance of transnational corporations. Initially conceived as a way of pulling additional innovation out of firms that markets would otherwise, advanced purchase agreements (also known as Advance Market Commitments (AMCs)) have in practice become vehicles for expanding vaccine delivery. The reason for this is that far more resources are needed to innovate than have been set aside of advance purchases as demonstrated in the case of the AMC for pneumococcal vaccine.⁵¹ Advanced purchase means that the likes of Merck and GSK can ensure the production of vaccine or drugs at cost or very low profit margins, with GSK’s CEO Andrew Witty publicly committing the firm to do just that in 2011.⁵² Northern and Southern firms thus each have their own comparative advantages. The challenge, according to one former pharmaceutical executive, is how to come up with the right incentives to engage all players operating in very different markets.⁵³

8.23 Firms are now formally involved in the development and management of institutional frameworks governing global health and agricultural development

SEI provided RF with a means to persuade states of the utility of its ideas throughout its history. With the rise of neo-liberalism, however, the Foundation’s emphasis on epistemic expansion waned to adapt to cuts in public sector expenditures resulting from the imposition of structural adjustment policies. To adapt to this new reality, operational programs and country level initiatives were reduced, and RF began to actively solicit corporate involvement in collective action and develop governance models around such participation. The PDP is just the latest knowledge structure for addressing global health challenges that RF has presented for consideration, which reflects its ability and willingness to adapt and innovate within externally imposed parameters.

⁵¹ Ibid.

⁵² Anonymous interviewee 8, June 9, 2011; Andrew Clark, “Andrew Witty of GSK: ‘Big Firms Have Allowed Themselves to Be Seen as Detached from Society,’” *The Guardian* (March 20, 2011), accessed June 15, 2011. <http://www.guardian.co.uk/business/2011/mar/20/andrew-witty-glaxosmithkline-big-firms-detached-society>

⁵³ Anonymous interviewee 6, June 23, 2011.

While the embrace of PPPs has not driven transformative change, it has driven positive change nonetheless, evidenced by the change in the state of R&D focused on the needs of the world's poor over the past two decades. Global health and agricultural PDPs are fulfilling their intended purpose of developing and delivering new health technologies and crop varieties after longstanding failures on the part of states and markets to ensure this autonomously.⁵⁴ This success has strengthened the argument that there is a clear need for for-profit entities to be formally involved in the development and management of institutional frameworks informing collective action focused on mitigating the adverse effects of global poverty and inequality.⁵⁵ The corollary to this has been a rise in corporate power in the governance of global health, agricultural development and food security.⁵⁶ This increase in corporate influence is disconcerting to many, in no small part because it presents a new set of coordination, legitimacy and accountability challenges.⁵⁷

The traditional purpose of firms has been to increase the wealth of a few. However, PPPs are conferring to firms equal partner status with public sector institutions in the creation of what are intended to be global public goods. Yet because IPRs are usually retained by private sector partners, the resultant technologies of PDPs tend to be neither non-rival nor non-excludable and cannot be considered true public goods.

The initial PDPs in global health were never intended to enable low-income country scientists to engage in health-oriented SEI without the aid of Northern private sector partners. This is significant because via the PDP model, the capacity to innovate for the public good in the world's poorest countries remains largely contingent on a very uncertain premise, that being Northern firms' willingness to continue sharing proprietary technology. Such uncertainty inevitably casts doubt on the overall sustainability of the PDP paradigm as

⁵⁴ Roy Widdus and Katherine White, *Combating Diseases Associated with Poverty* (Switzerland: Initiatives for Public-Private Partnerships for Health and Global Forum for Health Research, 2004), 1-30; Mary Moran, "A Breakthrough in R&D."

⁵⁵ Richard T. Mahoney and James Maynard, "The Introduction of New Vaccines into Developing Countries," *Vaccine* 17, no. 7-8 (1999): 647; Klaus Schwab, "Global Corporate Citizenship: Working with Governments and Civil Society," *Foreign Affairs* 87, no. 1 (2008): 107-118.

⁵⁶ Kent Buse and Andrew Harmer, "Seven Habits of Highly Effective Global Public-Private Health Partnerships: Practice and Potential," *Social Science and Medicine* 64 (2007): 267.

⁵⁷ Rushton and Williams, "Private Actors in Global Health." In *Partnerships and Foundations in Global Health Governance*. Edited by Simon Rushton and Owain Williams, 1-28. New York: Palgrave Macmillan, 2011.

a governance model guiding collective action geared towards reducing global health disparities. The long-term uncertainty of the PDP model thus illustrates the limits of the Foundation's structural power, as their institutional innovations will only succeed if essential participants (states and firms) remain committed to their success.

What alleviates some of this doubt however is the fact that for twenty years, firms have displayed a willingness to make their IP available to initiatives oriented towards addressing highly complex social problems facing the world's most vulnerable people.⁵⁸ Whether PPPs are serving to socialize firms to be more receptive to the needs of societies less fortunate is unclear. Bill Gates and Tachi Yamada, for example, would meet with the CEOs from the big pharmaceutical companies on an annual basis, which produced new investment by these firms in the Foundation's work, yet this does not constitute an admission on the part of corporate leaders that such private diplomacy is instilling new norms within corporate culture. The possibility that this may be occurring is compelling, however, and demands further exploration.

MNCs' power in world affairs predates the rise of the partnership paradigm.⁵⁹ In theory, because PPPs bring firms into the spotlight as problem solvers for the public good, it is possible that their formal inclusion into mechanisms of global governance will translate into increased accountability for their actions and/or broadened responsibilities to society. Doris Fuchs has suggested that when corporations make discursive commitments (e.g. to improve public welfare), their legitimacy as actors may increase in the eyes of a wary public, but so do public expectations of how such companies operate. If companies then fail to fulfill these societal expectations, the legitimacy gained through their commitments is lost, curbing their future ability to influence outcomes dependent on public opinion.⁶⁰ It is logical to assume but difficult to prove that through PPPs, RF and BMGF are setting firms up to assume more responsibility in global governance. What is clear however is that through the PPP, RF and

⁵⁸ Michael Reich, ed., *Public-Private Partnerships for Health* (Cambridge: Harvard University Press, 2002); Laura Frost, and Michael Reich, *Access: How Do Good Health Technologies Get to Poor People in Poor Countries?* (Cambridge: Harvard University Press, 2008).

⁵⁹ Strange, *The Retreat of the State*; Claire Cutler, Virginia Haufler, and Tony Porter, *Private Authority and International Affairs* (New York: University of New York Press, 1999); Susan Sell, *Private Power, Public Law: the Globalization of Intellectual Property* (Cambridge: Cambridge University Press, 2003).

⁶⁰ Doris Fuchs, "The Commanding Heights?: The Strength and Fragility of Business Power in Global Politics," *Millennium* 33, no. 3 (2005): 771-802.

BMGF are illuminating how firms can help public authorities reduce socio-economic disparities.

The establishment of the CGIAR ensured that public sector entities exist to develop new crop varieties for the specific benefit of farmers lacking the means to pay for such. No such analogue exists however in public health. The reality is that currently, with few exceptions, only drug companies develop and manufacture drugs.⁶¹ BMGF engagement with industry illustrates that it is imperative for those working to strengthen public health in developing countries to have a strong relationship with these companies given the central role they inevitably play in producing essential medicines and vaccines.⁶²

Undoubtedly placing firms at the centre of collective action efforts was a radical departure from the problem-solving paradigm centred on the inter-state system and IOs. At first glance the spread of the PPP paradigm in global governance might seem to mirror what Steven Bernstein labeled the “compromise of liberal environmentalism”; the normative compromise which “predicates environmental protection on the promotion and maintenance of a liberal order.”⁶³ Bernstein argued that this compromise meant that private sector support for institutionalizing the consideration of ecological integrity would be maintained so long as the legitimacy of the dominant liberal economic paradigm built around the liberalization of trade and finance and the premise of infinite growth remained unchallenged. Similarly, transnational pharmaceutical and agro-chemical companies have demonstrated a willingness to participate in collaborative initiatives to develop products aimed at strengthening the health of the world's poor, so long as the structural determinants of their wealth are not undermined. In the context of SEI, this means ensuring that IPRs are not weakened.

What RF and BMGF-driven product development partnerships have demonstrated, however, is that under certain conditions, firms are willing to waive licensing fees or royalties altogether for those who seek to duplicate their products or employ patented molecular tools

⁶¹ Roy Widdus, “Public–Private partnerships for Health: Their Main Targets, Their Diversity, and Their Future Directions,” *Bulletin of the World Health Organization* 79 (2001): 713.

⁶² Anonymous interviewee 27, January 4, 2012.

⁶³ Steven Bernstein, *The Compromise of Liberal Environmentalism* (New York: Columbia University Press, 2001), 4.

and processes for the benefit of the world's marginalized.⁶⁴ Seen in this light, the PPP may be construed as a vehicle for introducing new norms into global governance, which are catalyzing both behavioral changes in participants and overall changes in how collective action is organized, without overtly seeking to alter the overall distribution of political and economic power. Prior to PPPs, the process of tinkering had been— from the onset— restricted to a small rich minority. The social justice side of this is that by opening up the innovative arena, RF and BMGF are attempting, with some success, to democratize it.⁶⁵

8.3 Final thoughts

RF and BMGF are sufficiently anomalous so as to be seen as a distinct type of private actor in world politics, distinct from both the overwhelming majority of private Foundations, as well as from other power-seeking transnational non-state actors. Two common attributes— financial and political autonomy— equip them with a unique potential to exert influence in world politics and help explain how they have been able to accomplish what others have not.

First of all, they exert *agency through financial autonomy*. Most government agencies,⁶⁶ CSOs,⁶⁷ and IOs,⁶⁸ rely on funding made available on an annual basis to support their initiatives and are forced to shift their goals when funding is withdrawn, delayed or reduced. RF and BMGF in contrast have large endowments that alleviate the need to solicit money from public or private donors in order to test ideas they support. This financial autonomy allows them to approach issues with a distinctive long-term perspective most publicly funded organizations cannot afford to take. At the same time their financial autonomy allows them to take risks, such as investing in new technologies intended to benefit populations with limited purchasing power, which firms are generally unwilling to bear. Financial autonomy, therefore, permits RF and BMGF to function as catalysts: private actors using their own

⁶⁴ Reich; Frost and Reich.

⁶⁵ Anonymous interviewee 20, June 8, 2011.

⁶⁶ See for example T.D. Jick and V.V. Murray, "The Management of Hard Times: Budget Cutbacks in Public Sector Organizations," *Organization Studies* 3, no. 2 (1982): 141-169.

⁶⁷ See for example Alexander Cooley and James Ron, "Organizational Insecurity and the Political Economy of Transnational Action," *International Security* 27, no. 1 (2002): pp. 5-39.

⁶⁸ See for example Gill Walt, "WHO under Stress: Implications for Health Policy," *Health Policy* 24, no. 2 (1993): 125-144.

money to leverage the money of others for the public good. At the same time, in a world of finite public resources, the Foundations' material wealth provides them with considerable agenda-setting (i.e. structural) power.⁶⁹ Their financial autonomy translates into a level of influence over how we understand and respond to complex problems that is often disproportionate to the actual amount of money paid out via grants.

Second of all, they exert *agency through political autonomy*. RF and BMGF have no political masters or any official status in the international sphere. Their informal status however is key to their influence. While closely aligned with both firms and CSOs, they are comparatively unencumbered. While bound by the rule of law (e.g. US restriction on charities), they are freed from the constraints and caveats which donors, shareholders and constituents place on CSOs, firms, states and IOs respectively. This political autonomy has allowed them to function as "honest brokers," bringing together different stakeholders who might otherwise not meet. Because of their perceived political neutrality and demonstrated technical expertise, states have repeatedly afforded these private actors a unique and privileged position within both domestic and international policy making arenas on health and agricultural development-related issues.

In the neo-liberal era, RF and BMGF have proven themselves to be innovators in governance at the private-public interface and masters of private diplomacy. This has been demonstrated through their ability to convene informal, private dialogue between actors (states, firms, IOs, and NGOs) whose individual receptivity and cooperative ability has been deemed essential for successful institutionalization of the Foundations' strategies.

Through PPPs, the Foundations have indirectly forced the specialized agencies of the United Nations to re-examine their relationships with the increasing number of non-state actors seeking to use their material resources and expertise to strengthen food security and public health across the global South, shaping collective action oriented towards the same goals.

⁶⁹ Oran Young, *International Governance: Protecting the Environment in Stateless Society* (Ithaca, NY: Cornell University Press, 1994), 94.

Moreover PPPs have reinforced the argument that science and technology matter in public health and food security and provided a politically acceptable venue for firms to make concessions on increasing access to proprietary technologies for the benefit of populations with limited purchasing power. Consequently, RF and BMGF have provided both proponents and detractors of global capitalism with a new way of conceptualizing the role of business in society.

PPPs are by no means a panacea for global governance. Concern has been expressed for example that many of RF and BMGF-driven PPPs remain dependent on their funds,⁷⁰ which illustrates that while the Foundations exhibit the capacity to catalyse innovation in governance, they are typically not sufficiently endowed to sustain it. The entrenchment of the PPP paradigm—undeniably a market-based approach to development—reflects that we live in a much more market-based world than any other period in the post-war era, which is due to the global diffusion of capitalism. In this regard the PPP model represents governance adapted to externally imposed constraints and opportunities. The result is an approach to strengthening public health and agriculture that works within the dominant market-liberal economic paradigm, while seeking to correct for any of its deficiencies, which is wholly consistent with private governance as envisioned by the likes of Ruggie,⁷¹ and not, as critics suggest, a strategy intended to undermine the authority of public authorities while advancing the power of market actors. For while the nation state remains the most important actor in a sea of actors seeking to shape the governance of global health and food security, effective collective action is no longer something states are capable or are willing to orchestrate themselves, meaning that the PPP as an approach to collective action will remain relevant for the foreseeable future.

There is no shortage of organisations seeking to scrutinise, critique, or oppose corporate and government policies, or the structures of collective action that are often viewed as privileging the world's most powerful actors. Yet there are very few organisations that can capitalize on the very inequitable distribution of political and economic power in any given context to

⁷⁰ Buse and Harmer; Ann Danaiya Usher, "GAVI Enters Its Second Decade with Massive Funding Gap," *The Lancet* 375, no. 9717 (2010): 791.

⁷¹ John G. Ruggie. "Reconstituting the Global Public Domain: Issues, Actors and Practices." *European Journal of International Relations* 10, no. 4 (2004): 499-531.

catalyse changes in global governance that benefit society's most disadvantaged. In this regard, RF and BMGF appear to have a comparative advantage over other actors, whether private or public.

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Interview with Alex McCalla, December 9, 2010
Interview with Catherine Bertini, January 26, 2011
Interview with Florence Wambugu, February 3, 2011
Interview with Gordon Conway, February 8, 2011
Interview with Akin Adesina, February 10, 2011
Interview with Sam Dryden, July 20, 2011
Interview with William Foege, August 18, 2011

Interviews - Anonymous

Anonymous Interviewee 1, November 19, 2010
Anonymous Interviewee 2, January 18, 2011
Anonymous Interviewee 3, December 6, 2010
Anonymous Interviewee 4, July 12, 2011
Anonymous Interviewee 5, June 30, 2011
Anonymous Interviewee 6, June 23, 2011
Anonymous Interviewee 7, February 23, 2011
Anonymous Interviewee 8, June 9, 2011
Anonymous Interviewee 9, July 12, 2011 & November 29, 2011
Anonymous Interviewee 10, November 29, 2010
Anonymous Interviewee 11, January 20, 2011
Anonymous Interviewee 12, November 24, 2010
Anonymous Interviewee 13, March 1, 2011
Anonymous Interviewee 14, December 9, 2010
Anonymous Interviewee 15, January 18, 2011
Anonymous Interviewee 16, December 9, 2010
Anonymous Interviewee 17, August 18, 2011
Anonymous Interviewee 18, February 10, 2011
Anonymous Interviewee 19, November 29, 2010
Anonymous Interviewee 20, June 8, 2011
Anonymous Interviewee 21, February 8, 2011
Anonymous Interviewee 22, Nov 12, 2010
Anonymous Interviewee 23, February 3, 2011

Anonymous Interviewee 24, January 26, 2011
Anonymous Interviewee 25, August 16, 2011
Anonymous Interviewee 26, December 13, 2010
Anonymous Interviewee 27, January 4, 2012
Anonymous Interviewee 28, July 6, 2011
Anonymous Interviewee 29, July 20, 2011
Anonymous Interviewee 30, July 20, 2011
Anonymous Interviewee 31, November 22, 2010
Anonymous Interviewee 32, December 3, 2010