From Means to Ends
How Scientific Ideas Transformed International Politics, 1550-2010

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Bentley B. Allan

Graduate Program in Political Science
The Ohio State University

2012

Dissertation Committee:

Alexander Wendt, Chair
S.M. Amadae
Ted Hopf
Michael A. Neblo
Alexander Thompson
Abstract

The role of scientific knowledge is often viewed instrumentally: science serves the interests of political actors. In a historical analysis of international politics I argue that scientific ideas are no mere means to ends because they have transformed the goals and values of states and international organizations. Since the 16th century, experts and social scientists have imported what I call the “classical model of science” into international political institutions. This created pressure for changes in the means and ends of political discourses that privileged rationalist and modernist goals. The unintended naturalization of scientific values and goals poses serious problems for policy effectiveness, organizational learning, accountability, democratic control, and conceptualizing basic human needs. These problems pervade the world of global public policy. Why do scientific methods surreptitiously change the values and ends of political institutions? I argue that argumentation and communication in the everyday life of political institutions drives a discursive process by which means constrain and shape ends. Experts and social scientists import scientific concepts which alter the way the institutions can represent and intervene in reality. Scientific representations are naturalized when they are connected to cosmological concepts such as what the universe is made of and how to achieve objective knowledge. I find that normatively problematic naturalization is more likely to happen when institutions empower like-minded experts who favor abstract, calculable representations of reality. I begin my analysis before the emergence of modern science and trace the rise of scientific ideas through four case studies: power politics in early modern Europe (1550-1750), British colonialism (1750-1950), economic development in the World Bank (1950-2000), and peacebuilding in the United Nations (1990-2010). I conclude that the rise of scientific ideas supports growth oriented policies rooted in narratives of scientific and technological progress. While the causes of the growth imperative are complex, challenges to growth oriented policies depend on new policy tools rooted in alternative scientific and non-scientific discourses.
I am fortunate to be in a position to thank a large number of people for their generosity and care. I would to thank the generous efforts of my committee members Alex Wendt, Sonja Amadae, Ted Hopf, Michael Neblo and Alex Thompson. Their hard work and guidance made it possible for me to undertake such an ambitious and rewarding project. They allowed me to choose my own path never stopped pushing and challenging me. My colleagues Austin Carson and Jason Keiber formed an essential shadow committee that combined scholarship and friendship in the way I have always longed for. Zoltán Búzás, Burcu Bayram, Aldous Cheung, Marcus Holmes, Tim Luecke, Fernando Nuñez-Mietz, John Oates, Dave Traven, and Clément Wyplosz provided an ideal intellectual environment in the Wendt student group. I am also delighted to thank many colleagues at Ohio State who took the time to comment on my work: Bear Braumoeller, Eun-Bin Chung, Andrew Dombrowski, Kevin Duska Jr., Erin Graham, Eric Grynaviski, Richard Herrmann, Matt Hitt, Josh Kertzer, Marcus Kurtz, Eric MacGilvray, Sebastien Mainville, Eleonora Mattiaci, Vittorio Merola, William Minnozzi, Irfan Nooruddin, Philipp Rehm, Randy Schweller, and Daniel Verdier. Melissa Labonte and Matthias Staisch were model discussants at ISA 2010. Finally, thanks to Caitlin C. Stokes for the constant questions, walks, and support.
Vita

2002-2006.........................H.B.A., Peace and Conflict Studies, University of Toronto

2006-2008.........................M.A., Department of Political Science, The Ohio State University

2008-2012.........................PhD Candidate, Department of Political Science,
                   The Ohio State University

Fields of Study

Major Field: Political Science
# Table of Contents

Abstract...................................................................................................................................................ii

Acknowledgements...................................................................................................................................iii

Vita............................................................................................................................................................iv

List of Figures.............................................................................................................................................vi

List of Tables..............................................................................................................................................vii

Chapter 1 – Introduction: The Political Pathologies of Scientific Discourse ......................... 1

Chapter 2 – From Means to Ends: Scientific Discourse in International Society .......... 19

Chapter 3 – God, Glory and the Balance of Power: Science and Interests in European Power Politics, 1550-1850........................................................................................................... 77

Chapter 4 – The Objects of Development: Evolution and Progress in British Colonial Policy, 1860-1950.................................................................................................................................. 139


Chapter 7 – Conclusion: Alternatives to Scientific Discourse............................................. 305

References................................................................................................................................................330
List of Figures

Figure 2.1 – A Generative Structure of Discourse.................................................................27

Figure 3.1 – Close Order Marching in the Eighteenth Century...........................................88

Figure 3.2 – “Colbert Presenting the Members of the Royal Academy of Sciences to Louis XIV in 1667” By Henri Testelin.................................................................91

Figure 5.1 – Diverging Trends in Real Income Growth.........................................................197

Figure 5.2 – Introduction to a 1948 Brazil Country Report..................................................205

Figure 5.3 – GDP Growth Figures from the 1985 Nepal Country Report..............................220

Figure 5.4 – The Macroeconomic Perspective in the 1985 Nepal Country Report..............221

Figure 5.5. “Growth” and “Poverty” in World Bank Discourse, 1950-1999.........................227

Figure 5.6. “Growth” and “Poverty” in Project Documents, 1950-1999..............................227

Figure 6.1 – Organizational Chart for UN Peace Operations................................................280

Figure 7.1 – Opinions about Scientific Advance: “will help.”..............................................307
List of Tables

Table 4.1 – Colonial Office Recruitment, 1913-1952..........................152
Table 4.2 – Growth of Colonial Office Advisory Committees, 1900-1961.............153
Table 5.1 – World Bank Spending by Category, 1947-57.................................208
Table 5.2 – World Bank Lending by Type of Loan, 1979-1989..........................225
Table 5.3 – World Bank Lending by Type of Loan, 1990-2000............................226
Chapter 1

Introduction
The Political Pathologies of Scientific Discourse

“No political thinker can expect to be heard who would not, at least, in his terminology, pay tribute to the spirit of science, and, by claiming his propositions to be ‘realistic,’ ‘technical,’ or ‘experimental,’ assume their compliance with scientific standards.”

– Hans J. Morgenthau\(^1\)

“Honorable professors and academics! You should always bear in mind that scientific growth constitutes the cornerstone of our country’s progress and development. Only science and research will be able to advance and improve human infrastructure, which is our country’s most important infrastructure.”

– Ayatollah Khamenei\(^2\)

I. THE INSTRUMENTAL VIEW OF SCIENCE AND TECHNOLOGY

Though we often take it for granted, scientific knowledge plays a crucial role in the governance of global problems like disease control, climate change, global poverty, and financial regulation. Scientific advisers and other experts are so central to the modern state that one observer labels it the “fifth branch” of government.\(^3\) Scientific ideas are now embedded in a global culture that infiltrates the core institutions of international politics. From this position of global power, scientific ideas influence the development of state institutions, shape education and health policy, encourage environmental regula-

\(^1\) Morgenthau 1946, 31.
\(^2\) Khamenei 2005.
\(^3\) Jasanoff 1990.
tion, and contribute to economic development.\footnote{Meyer et al 1997; Drori et al 2003.}

The changes wrought by science and technology are often interpreted as changes in the means or methods of politics. This is an “instrumental” view of the effects of science and technology on which science is a neutral method or means to help political actors achieve their ends. As such, it is subservient the interests of states or political actors, rather than an independent force in international politics. For example, Eugene Skolnikoff argues that while the changes wrought by science and technology have been interesting, fundamental transformation remains “elusive”:

[T]he evolution of the \emph{details} of international politics due to the interaction with advancing science and technology has been as impressive and astonishing as common rhetoric proclaims. But the more general impact on the underlying concepts and assumptions that govern the relationships among nations has in fact been considerably less marked. There are some important exceptions, but they do not counterbalance the realization that fundamental changes in the international system as a whole have been quite limited.\footnote{Skolnikoff 1993, ix-x (emphasis in original).}

Skolnikoff goes on to argue that “dramatic” examples one could find do not alter the fact that science and technology are close tied to “national goals.”\footnote{Skolnikoff 1993, x.} In short, science and technology influence only the details and not the substance of international politics.

This instrumental view is also evident in the literature on science and technology in war. Military historians argue that advances in science and technology are central to state security and the conduct of war since the sixteenth century.\footnote{Parker 1988, 155ff.; Van Creveld 1989, 128, 144, 207; Boot 2006, 84, 112, 167, 449ff.} Robert Gilpin argues that France increased science funding after the Second World War because it feared a “technology gap” between itself and the United States might undermine French influ-
ence and security. Science funding helped France realize its interests in a threatening geopolitical environment. According to these accounts, science matters in international politics because scientific ideas and policies serve the interests of powerful actors.

Peter Haas seeks to go beyond the instrumental view. He theorizes “science” as a set of ideas and beliefs and demonstrates that groups of scientists and experts can use scientific knowledge to shape state interests. In his seminal work on atmospheric scientists, Haas shows how an epistemic community persuaded leaders that the emerging hole in the ozone layer posed a threat to the health of their citizens. They used authoritative reports representing scientific consensus to convince states that it was in their real interests to build a strong international treaty to regulate ozone depleting emissions responsible. This is an important argument that demonstrates the power of scientific knowledge in politics, but it amounts to the claim that scientists helped states realize their true interests. In the end, Haas suggests, like Skolnikoff, that “the range of impact that we might expect of epistemic and epistemic-like communities remains conditioned and bounded by international and national structural realities.” Thus, he also employs a largely instrumental theory of science. While scientific knowledge alters the details of state interests, it does not change politics in any deep or fundamental sense.

This instrumental theory of the role of science in politics is in sharp contrast to a large body of research in philosophy, social theory, and history that argues scientific

---

8 Gilpin 1968.
9 To me, this is a functionalist explanation. See Keohane 1984, 80-82; Thompson 2010.
11 Haas 1992b.
12 Haas 1992a, 7.
13 Moreover, Haas’ findings are limited to the effects of the natural sciences on political practices. His key variable in epistemic community influence is consensus, which is unlikely to be found in the social sciences. This is problematic for my purposes, because the social sciences that are most likely to act as a bridge between scientific ideas and international politics. Other variables must be introduced to explain variation.
ideas have transformed all aspects of modern life.\textsuperscript{14} In the political context, James C. Scott argues that scientific ideas are central to the leading ideology of modern states, “high modernism”:

[A] strong, one might even say muscle-bound, version of the self-confidence about scientific and technical progress, the expansion of production, the growing satisfaction of human needs, the mastery of nature (including human nature), and, above all, the rational design of social order commensurate with the scientific understanding of natural laws.\textsuperscript{15}

Scott demonstrates that high modernism has profound effects on a variety of state policies, from forestry management in Germany to the villagization campaigns in 1960s Tanzania. In both cases, “scientific” and “rational” plans rooted in oversimplified models ruined livelihoods and lives because the complex social basis of local ecologies and economies “defy administrative codification because of their endless local variability, their elaboration, and their plasticity in the face of new conditions.”\textsuperscript{16} Despite its inability to effectively solve problems in a variety of domains, scientific modernism nonetheless shapes the core form and interests of modern states. The resultant policies have real human and environmental costs. These are hardly “details.”

In what follows I show that scientific ideas have changed the values and goals not just of states, but of international politics itself. Scientific modernism and other scientific ideas are not merely embedded in individual states but form the core of international society itself. Scientific ideas dominate international organizations like the World Bank and are increasingly important in unlikely places such as UN peacebuilding missions. Here, as at the domestic level, scientific ideas can have unintended and potentially

\textsuperscript{14} Horkheimer and Adorno 2002; Ellul 1964; Foucault 1970; Habermas 1970; Rouse 1987; Adas 1989; Jasanoff 1990.
\textsuperscript{15} Scott 1998, 4.
\textsuperscript{16} Scott 1998, 246.
harmful effects. Since the effects of scientific ideas on goals and values are difficult to see, they often go unnoticed by political actors. This can lead to bad policy, impede organizational learning, and undermine collective control of global public policy. But at the international level these problems are exacerbated because once scientific ideas are embedded at the international level, then the addressing the problems becomes a global affair requiring global solutions. Moreover, it is more difficult to correct policy and reestablish accountability in international contexts because the institutions are further removed from domestic publics who have limited access to the language and procedures of expert policy-making.

In the cases examined here I make the case that scientific ideas dominate international politics by showing how these ideas have changed the goals and values of states and international organizations. For example, in Chapter 5, I show how macroeconomic, scientific methods of analysis made it difficult for the World Bank to focus directly on poverty alleviation. Instead, scientific methods privileged abstract, calculable indicators like economic growth that are of questionable normative interest in themselves. That is, what we really care about in international development is the well-being of individuals which is difficult to capture with exact, quantitative models. It is not that scientific methods are incapable of measuring these outcomes, but there are considerable costs to designing fine-grained indicators that are connected to the real lives of individuals. Complex organizations like the World Bank are likely to shirk these costs and to pursue proxy goals removed from outcomes of interest.

Over time, proxy goals can be translated into values in a process I call “means-ends change.” Means-ends change happens when new tools and problem-solving methods
surreptitiously change the way objectives and goals are measured and understood. In processes of means-ends change, scientific ideas make some goals easier and more natural to pursue than others. As these goals are deployed in organizations, they become taken-for-granted and are converted into values in and of themselves. In the World Bank, the use of scientific methods privileged economic growth because it was amenable to quantitative indicators and could be linked to narratives of scientific and technological progress. Growth is meant to track substantive well-being, but over the course of the 1970s, it became a taken-for-granted end in itself.

Processes of means-ends change undermine the instrumental view of science and politics because it shows that scientific ideas are not merely tools that help states realize their interests. Instead, scientific ideas have effects on the values that constitute international politics. Moreover, processes of mean-ends change are normatively problematic because they can happen without the knowledge of political actors and remove the goals of organizations and societies from conscious political control. This is especially perverse because scientific methods are supposed help organizations learn in a non-dogmatic fashion. However, if using scientific methods changes the way actors see the world and what they value in the world, they can actually contribute to learning that is calibrated to the scientific data and models, rather than the reality on the ground. Real people struggle, suffer, and die prematurely because global public policies exchange moral and political significance for scientific rigor.

This problem is compounded because scientific problem solving techniques crowd out alternatives. Alternative problem solving methods, like legal or deliberative procedures, are likely to be better at accommodating social ties and intersubjective meaning,
and can therefore avoid some of the issues identified above. But if these procedures cannot meet the accountability standards of “scientific management” or satisfy the demands of social scientists that drive global public policy they fall by the wayside.

The subsequent narrowing of political vision and policy possibilities leaves everyone worse off. Alternative, qualitative goals and values become more difficult to effectively pursue in states and large international organizations. This accelerates the rationalization of international society and replaces the rich cultural and social diversity of the world with a homogeneous culture dominated by scientific and technological modernity. Other forms of life are delegitimized and rendered impractical or labeled “backward.” Though elites no longer aim to assimilate societies to the “civilized world,” social scientists in government, education, medicine, and environmental policy export Western practices and institutions to every society. This promotes the idea that all societies should pursue scientific and technological progress defined as unending capitalist economic growth. This way of life is supported by a consumerist lifestyle with potentially negative social and ecological effects. In turn, the political exigencies introduced by the growth imperative emaciate democratic choice. Governments are often compelled to implement pro-growth reforms with significant social and ecological costs, regardless of the wishes of the people. Alternative goals and values cannot compete on the same plane as economic imperatives back by scientific ideologies.

However, the democratic implications of means-ends change driven by scientific ideas are even more troubling. Unintended and unnoticed means-ends change makes it

18 Røpke 1999.
19 Habermas 1970.
impossible for global elites to collectively control goals and values. This is bad enough, but the problem is deepened by the fact that these elites are increasingly independent from domestic publics. Scientific ideas are the basis of elite-driven global public policy networks that are inaccessible to laypersons. The scientific language of global public policy is carried by a small global ruling elite that is educated in leading universities, travels in cosmopolitan circles, and is increasingly out of touch with the masses. Indeed, the average rural farmer in Asia and Africa simply cannot understand or intervene in the global public policy discussions that shape the economic and social fate of their society. As a result, global public policy is removed from the tradition mechanisms that democratically legitimate decisions and hold officials accountable. Moreover, if global policies are failing, it is increasingly difficult for citizens the world over to voice concern and provide the feedback necessary to develop more effective policies.

The instrumental view of science and politics passes over these pathologies. In contrast, I provide a cultural and historical theory of science and politics that is better equipped to explain and understand the complex and often normatively problematic effects of scientific ideas on political goals and values. My theory begins with the fact that the effects and pathologies of scientific discourse are naturalized and so are not easy to see. Therefore, they are difficult to intentionally control or consciously revise. A necessary first step to challenging these pathologies is a historical analysis that denaturalizes the effects of scientific ideas on political discourse. In this project I undertake a historical analysis of international society designed to uncover these effects. This serves to both develop new international theory and perform an ideological critique of the instrumental view. I see the two tasks as intertwined. A solution to the problem listed
above must correctly diagnose the conditions under which scientific ideas are likely to have negative effects on political discourse. The positive yet critical theory I offer does not serve to malign the role of science in politics. Instead, it serves as a precursor to the reconstruction of the role of expertise and scientific knowledge in political organizations.

II. HOW MEANS CHANGE ENDS

How does the concept of means-ends change explain why scientific ideas and techniques surreptitiously change the policies, goals, and values of political institutions? Why do methods that are designed to help people control the world and better achieve their ends sometimes end up working against their better judgment to create pathological outcomes in international society?

Over the long run of history the rise of scientific ideas as means or tools for political actors is easy to understand. The enormous success of science and technology in the progress of the natural sciences and the dynamism of the industrial revolution endowed scientific techniques with incredible authority. Political actors seeking to accomplish their goals and reduce uncertainty applied methods developed in the natural and mathematical sciences to problems in the political domain. Scientific methods were perceived to help powerful states fulfill their interests in a competitive international environment.20

While this explains the rise of scientific ideas in international society it does little to explain why these same ideas change values and lead to pathologies. How and why do means change ends against the better judgment of political actors? Most political science

20 In the same way that Waltz argues states must adopt the beliefs and strategies of power politics or be selected out, one might suppose that states will adopt scientific beliefs and values or else fall by the wayside. See Waltz 1979, 92.
theory, rooted as it is in the instrumental view, is silent on this point. Rational choice theory, which argues that self-interested actors seek to maximize their utility, implicitly separates means and ends. Actors have stable preferences that they seek to efficiently realize. The view here is that means are supposed to be tools that allow us to accomplish our goals; they are not supposed to change our values and goals. For whatever reason, political scientists have very little to say about why science, a discourse about means, exerts power over ends. As well, political scientists of all kinds tend to employ static conceptions of ideas. Many theorists do not take values seriously at all, but even those who do tend to reify ideas as unchanging units that travel from one actor to another. But it is unclear how one type of idea, means, can be transformed into another kind of idea, ends. This then is an issue of how ideas change in situ.

To make sense of surreptitious means-ends change I embed political actors in a cultural context that shapes their views about how to go on in the world and what goals are worth pursuing. I call this context a discourse. Discourses are carried and reproduced by institutions. Discourses are socially constructed over the long run, but in the short-run they shape the ideas and actions and political actors in profound ways. When scientific ideas are incorporated into political institutions they set off a process of means-ends change that transforms goals and values.

I define “scientific ideas” as “classical scientific discourse” (CSD) or the “classical

---

21 As in the instrumental view of science, this separation of means and ends might be rooted in the self-understanding or professional norms of social scientists. Since social scientists have a strong professional commitment to the fact-value distinction, we tend to believe that the methods we use to study the world have no effect on how we see or value the world. I suspect that this Weberian commitment to separating means and ends spills over into a theoretical tendency to ignore means-ends change.

22 My theoretical approach is rooted in a discursive variant of historical institutionalism. See Berger and Luckmann 1966; Schmidt 2009; Nexon 2009; Fioretos 2011; Pierson 2004; Hall 2010; Lawson 2006.
model of science.” 23 I think of CSD empirically and historically, not normatively, as the actual ideas, concepts, practices, and beliefs employed by actors (whether they be persons or institutions) that were perceived as scientific. 24 The political effects of classical scientific discourse vary historically, based on the personal proclivities of powerful political actors, or on which scientific theories or traditions enjoyed widespread cultural authority. As we shall see, classical scientific discourse (CSD) originated in the work of a group of independent European scholars in the 16th century trying to solve problems in “natural philosophy.” Their research was first institutionalized in scientific academies and universities, and then spread out into European society as a whole during the industrial revolution. Though this discourse has changed considerably since its emergence, recent research in the history of science shows that there is a common core of concepts and practices that have remained part of scientific discourse since 1550. The meanings and connotations of the concepts have changed, but the discourse remains coherent over the centuries. For example, Daston and Galison show that natural philosophers and scientists continually strive for “objectivity” but that the concept meant something very different three hundred years ago. 25 I elaborate upon this historical and ideational conceptualization of science in the next chapter. There, I highlight eight features of CSD that have particular political significance. CSD is universal, objective, experimental, reductive, quantitative, ordered, Rationalist, and modernist. As these elements enter political discourse they put pressure on political means and ends.

23 I borrow the term but not its content from de Jong and Betti 2010.
24 As for defining “science” on its own, I consider that outside the scope of this project. But I am happy to go along with some version of Park and Daston’s definition of science as a set of concepts, practices, and beliefs about how disciplined inquiry can build reliable knowledge about the world (2006, 2-3).
In short, I argue changes in methods of problem-solving (means) generate change in the values and goals (ends) of states. CSD has these effects because it contains an implicit worldview or “cosmology” with embedded claims about how to build knowledge, what the universe is made of, and how to understand humanity’s place in it. Thus, it has important implications for what we should value and why. When scientific ideas move into a discourse, like politics, they change the deepest, most foundational levels of that discourse, which in turn changes how people think, what they value, and what arguments they will find convincing. In what follows, I embed international institutions in international discourses and demonstrate the mechanisms that translate scientific ideas into value change. I find that international organizations are likely to succumb to scientific means-ends change if they rely on small groups of like-minded experts that depend on oversimplified scientific representations of the world.

I lay out these theoretical arguments in Chapter 2. Then, in a series of empirical case studies structured chronologically between 1550 and 2010 I demonstrate that this process has transformed both the form and the content of political goals and values. In each empirical chapter, I perform an original discourse analysis on primary documents to uncover and establish means-ends change. I then trace the processes of change to identify key causal variables. Each case study performs two tasks for the project as a whole. First, they provide a specific case study of means-ends change. As such, they provide opportunities to explore causal mechanisms and assess the importance of key factors. Second, the case studies are arranged chronologically so that each case reveals the how the scientific ideas of the time period influenced politics. This allows me to explore how each of natural philosophy, the Enlightenment, Darwinian evolution, and the rise of the social
sciences in the 20th century affected political discourse differently. It also offers the opportunity to provide a coherent story about the rise of scientific ideas in international society.

In Chapter 3, I begin in the 16th century, before the rise of scientific ideas, to understand the differences in political discourse before and after the scientific revolution by tracing the rise of balance of power thinking. In the 16th century, political goals were diverse, rooted in dynastic concerns, saving souls, honor, and glory. Over the course of the 17th century, as scientific ideas developed and spread, rulers began to talk and think about “reason of state” and “interests.” These interests were increasingly defined not in dynastic terms as they had been traditionally, but in statist terms. This “interest” discourse in turn bolstered the idea of the balance of power. This idea was institutionalized in the Treaty of Utrecht in 1713, and redefined as equilibrium during the Vienna Congress of 1813-15. I argue that this change in ends was caused by the influx of scientific experts into growing state bureaucracies, which in turn, imported a discourse privileging ordered conceptions of reality and rationalist understandings of political action.

In Chapter 4, I trace the effects of the Enlightenment and the rise of biological ideas on policy in the institutions of a specific state. I show that in the 19th century British colonial policy was dominated by a laissez-faire liberalism supported by utilitarian and biological ideas. In the late 19th and early 20th century, indigenous resistance and international criticism induced a crisis of legitimacy in the British Empire. To address the problems and preserve the Empire, Colonial Secretary Joseph Chamberlain and his successors hired large numbers of natural and social scientific experts to serve in the Colonial Office. At first, these experts merely reflected the Darwinian backdrop of British society,
arguing that “primitive” societies would develop in accordance with natural laws. The role of the British was simply to oversee this process. However, as the experts worked on late colonial problems they constituted a series of objects – labor, public health, education, and the economy – that could be controlled and manipulated. These objects contributed to the idea that a government could and should intervene to achieve modernist goals like economic growth. Experts in the British government thereby invented and exported the ideals of economic and scientific development progress as desirable goals for all modern states. In short, introducing scientific means changed colonial policy from *laissez-faire* liberalism to modernist interventionism.

After the Second World War, these interventionist and modernist ideas were codified in institutions at the international level. In Chapter 5, I trace how modernist ideas constituted the ends of the early World Bank. In 1968, Robert McNamara became president of the World Bank and set out to temper the modernism of the Bank. He sought to put poverty alleviation and economic growth on equal terms. In pursuit of this aim, McNamara, like Chamberlain before him, hired experts who imported classical scientific discourse into the organization. This constrained and shaped the way the organization could represent and pursue its goals. Rather than addressing poverty, McNamara’s economists drove a process of means-ends change in which economic growth was privileged and naturalized. Furthermore, these economists linked economic growth to scientific and technological progress. The Bank then spread these concepts and values to various states in the second and third world. In this way, the institutions of international society reproduce and expand the influence of scientific discourse.

In the final empirical chapter, I compare the outcomes in the Bank to outcomes in
United Nations peace operations. While some technical and scientific concepts have entered the UN organizations responsible for peacekeeping and peacebuilding, these have to compete with humanist and liberal discourses that privilege social bonds, human rights, and justice. As a result, scientific naturalization is disrupted. I argue that the difference between this case and the Bank lies in the ways that the institutions represent reality. Whereas the economists in the Bank represent reality in an ordered, legible way, the officers in the United Nations represent reality with first hand narratives and surveys that preserve the intersubjective ties necessary for effective conflict resolution.

But United Nations peace operations also support modernist, interventionist ideas. In this way, they too reflect the dominance of what I call scientific and technological progress. Whereas in the 16th century, there was no definition of progress and political actors pursued honor, glory and God’s imperatives, today all modern states pursue scientific and technological progress operationalized in terms of the abstract, universal, and calculable goal of Gross Domestic Product. Economic growth combines the scientific faith in linear progress, scientific metaphors of natural, organic growth, and the normative value associated with a scientifically advanced way of life into a powerful political ideology the world over. Thus, together the empirical chapters demonstrate that scientific values have been and continue to be powerful ideas in international society. This is significant for theoretical, normative, and empirical reasons that I take up in the conclusion. There I argue that scientific and technological ideas naturalize the idea that all states can and should pursue unlimited economic growth. The growth imperative is increasingly problematic as research shows us that it fails to reliably and validly track improvements in well-being and as climate science demonstrates that unending growth...
with cause irreversible ecological damage. I conclude that challenges to classical scientific discourse depend on the creation of alternative problem-solving techniques that can conceptualize and operationalize alternative ends. These alternatives must develop new ways of representing social and political environments and be incorporated into institutions designed to foster diverse deliberations. Only institutions that can support whole ecologies of means and ends can hope to avoid the pathologies caused by the naturalization of oversimplified abstract scientific models. Thus, the solution is not to eliminate classical scientific discourse, but to force it to compete with other ways of seeing and solving problems.
REFERENCES


Chapter 2
From Means to Ends
The Institutionalization of Scientific Discourse

“[T]he cause of the origin of a thing and its eventual utility, its actual employment and place in a system of purposes, lie worlds apart; whatever exists, having somehow come into being, is again and again reinterpreted to new ends.”

– Friedrich Nietzsche¹

“[C]hange in human aspirations and human institutions is caused mostly by the way knowledge about nature and about society is married to political interests and objectives.”

– Ernst Haas²

I. THE PROBLEM

Why do scientific methods surreptitiously change the values and ends of political institutions? In the previous chapter I argued that the instrumental view of science can explain neither the transformations of international politics, nor identify the political problems that arise from the misapplication of scientific discourse in political organizations. In his prescient study of international organizations When Knowledge is Power, Ernst Haas suggests two alternative, cultural ways to think about the role of science in international politics. First, he argues that science is important as knowledge that epistemic communities translate into policy via successful coalitions with powerful political

¹ Nietzsche 1967, 77.
² Haas 1990, 11.
actors.³ For Haas, knowledge is more than just shared information.⁴ In Wendt’s terms, it is collective, cultural knowledge that unites technical beliefs about the world with intersubjective consensus amongst experts.⁵ For Haas, this knowledge is important because political actors use it to promote institutional change in international organizations. Peter Haas and others have developed this idea and we now know a great deal about how epistemic communities work and under what conditions they are likely to be effective.⁶

In this literature, scientific knowledge operates as a cultural cause of change in international politics. But Haas also argues that there is a second, deeper, constitutive effect of scientific knowledge on the discourse of politics:

>[A]s scientific knowledge becomes common knowledge and as technological innovation is linked to institutional tinkering, the very mode of scientific inquiry infects the way political actors think. Science, in short, influences the way politics is done. Science becomes a component of politics because the scientific way of grasping reality is used to define the interests that political actors articulate and defend. The doings of actors can then be described by observers as an exercise of defining and realizing interests informed by changing scientific knowledge about man and nature.⁷

On this second view, scientific knowledge acts as “a shaper of worldviews.” Haas suggests that over time “the intellectual commitments of the seventeenth-century scientists and mathematicians penetrated the way political economists and their disciples in governments began to see the world.”⁸ Scholars of international politics as yet know little about this second process. These effects can only be understood and explained by a historical theory that traces the effects of scientific ideas on the deep culture of international

³ Haas 1990, 28, 40-42
⁴ Haas 1990, 74.
⁵ Wendt 1999, 157ff.
⁷ Haas 1990, 11.
⁸ Haas 1990, 22.
politics.

But the question at hand is more significant than uncovering the mechanisms or channels that transfer scientific ideas into political discourse. The problem is that once scientific ideas are imported into institutions they are naturalized and reified. If the effects of this were solely beneficial or benign there would be no cause for concern. However, as I argued in the last chapter, scientific problem-solving methods are vulnerable to exclusions and pathologies. The real puzzle is how and why scientific ideas change ends in negative ways behind the backs of agents. Why do scientific means change ends against the better judgment of decision makers and experts? Why do mere descriptions or representations have profound consequences for whether or not poverty stricken people and war torn societies get the policies necessary to improve their welfare? An answer to these questions will give a clear sense of what is going wrong when scientific ideas are deployed in political institutions. Moreover, a clear diagnosis of the problem will explain why international society in particular is susceptible to means-ends capture.

In this chapter, I set up the theoretical tools to make sense of the interaction of science and politics in the cases that follow. I first define and operationalize science as “classical scientific discourse” and describe how it enters political institutions (II). I then argue that means-ends change can be explained as a process of “institutionalization” (III). Finally, I describe how moments of institutionalization add up to change in the cultural content of international society (IV).

Before we proceed to the argument, I must introduce the central discursive framework within which my analysis proceeds. In what follows I will argue that scientific discourse enters and changes political discourses. Before we can make sense of this argu-
ment, we must have a theory or structure of discourse. So I present this here as a necessary preface, albeit a difficult and somewhat awkward one, to defining scientific discourse and building a theory of means-ends change rooted in the constitutive power of communication.

A Generative Structure of Discourse

I conceptualize discourse as the shared background ideas that underlie all social reality. A discourse is a web of shared symbols, meanings, rules, assumptions, and practices that delimit the imaginable, knowable, sayable and doable.\textsuperscript{9} Evidence of discourse can be found in “[e]verything that is said or written in a given state of society, everything that is printed or talked about and represented today through electronic media.”\textsuperscript{10} Discourses “situate ordinary practices of life and define the social fields of action that are imaginable and possible.”\textsuperscript{11} Thus, discourse provides resources for action and argumentation. It defines actors’ interests and their beliefs about how these can be realized. Since it contains authoritative terms, relations and positions, discourse has a ‘normative slope.’ Some arguments are harder to make than others because they must argue ‘up-hill’, as it were, against the ‘discursive slope.’\textsuperscript{12} On this view, discourse is not powerful primarily because it directly competes with material power and self-interests in important moments. Rather, it is powerful because in the long run, arguments that follow the normative slope of discourse will be more persuasive than others and this has a probabilistic effect on social outcomes in the aggregate. But discourse is also powerful

\textsuperscript{9} Angenot 2004, 200; Hopf 2002a, 21-22
\textsuperscript{10} Angenot 2004, 200.
\textsuperscript{11} Barnett and Duvall 2005, 55.
\textsuperscript{12} Taylor 1985 [1967], 73.
because it “produces” the social world in both visible and invisible ways. Some actions are thus rendered unthinkable; others are naturalized, taken-for-granted, and therefore never challenged.

I draw this understanding of discourse from a broad tradition in social theory, but I am particularly influenced by the sociological ideas in Habermas’ Theory of Communicative Action. Habermas argues that social order is simply not possible without language and meaning. Language is necessary because it allows actors to coordinate and agree upon plans of action. Even social relations that are infused with power relations and beholden to the self-interests of the participants depend on the ability to engage in argumentation oriented to a consensus about how to go on in a situation. To make threats or give, one must be understood.

Reasons are drawn from what Habermas calls the ‘lifeworld.’ The lifeworld is difficult to define, but is best summarized as a store of reasons or the shared cultural background of any social group. In the process of argumentation and communication, reasons that normally rest unchallenged in the lifeworld are made conscious and tested for their validity against all other reasons in the person’s subjective belief set. Sometimes an actor will revise or abandon deeply held beliefs after facing these types of challenges. But since the actor cannot jettison all her beliefs, the most convincing arguments will be those that resonate with an actor’s deeply held values and beliefs about the nature of

---

16 This thesis is stated clearest at Habermas 1987, 119-126.
17 I prefer the term ‘discourse’; but its just semantics for the purposes of this project.
18 This is similar to Robert Brandom’s inferentialism. Brandom 1994; Brandom 2000; Wanderer 2008.
reality. This role for conscious argumentation in changing individuals and their behavior does not exhaust the power of the lifeworld. The unseen and unchallenged regions of the lifeworld are also powerful because they naturalize social reality and render alternatives to the order of things as unthinkable.20

So discourse elicits compliance indirectly, by rendering alternatives unthinkable, and directly, by making some arguments more convincing than others. Both mechanisms have the tendency to steer social action in certain directions rather than others over the long run. But in the short-run, as Ruggie points out, the direct effects can be quite strong or quite weak depending on the degree to which agents are constituted by and share the relevant discourses.21 As Habermas and Berger and Luckmann argue, social enforcement mechanisms will only constrain social actors when actors share a thick lifeworld or interact in highly institutionalized settings.22

I aim to explain why scientific ideas change discourse in ways that go unnoticed, or which lie below the surface. But to understand this, we need to have some notion of how unseen and taken-for-granted ideas are powerful. Why might any idea prove more powerful than another? Why are some arguments more convincing than others?

The power of an argument rests on the background of shared reasons it draws on. This theme is prominent in ideational theories that seek to explain why certain ideas or

19 Habermas 1984, 1-50.
22 Berger and Luckman 1966. Thus, whether or not social mechanisms will work depends on a thick social context that may or may not be present in international society. This means that constructivists who rely on strong mechanisms of social compliance may be overplaying their hand. I think logic of appropriateness arguments are a good example of my concern here. Cf. March and Olsen 1998; Bially Mattern 2005.
arguments are more powerful than others. For example, Bernstein explains the rise of “sustainable development” and market mechanisms in global environmental discourse by showing how these ideas “fit” with the modern discourse of liberalism. Bially Mattern argues that U.S. officials were able to resolve the Suez crisis by persuading the British that their actions did not match its identity narratives as a protector of the west or special friend of the U.S. Price argues that the chemical weapons taboo was effective because “the protests against this weapon occurred during the first serious questioning of the Enlightenment faith in progress” after World War I. Hawkins argues that certain human rights norms are powerful because they link cooperation with progress and resonate with widely shared norms like the prohibitions on bodily harm. Huysmans argues that “[u]ttering ‘security’” is a powerful speech act because it is connected to many other concepts and so recalls a “wider order of meaning” and “articulates a particular way of organizing forms of life” because it makes implicit claims about “our relations to nature, to other human beings and to the self.” This common strategy of linking the power of arguments to fundamental ideas is insightful and promising. These works are all important steps toward a theory of ideational power. However, as yet, these theories are ad hoc because there is no theory of discourse to tell us which ideas are more fundamental than others.

Is there a unifying criterion underlying all these examples that can explain why some

---

23 These arguments act as responses to a common criticism of ideational international theory: they do not explain why some ideas rather than others are accepted and institutionalized. See, Adler 1997, 337; Kowert and Legro 469-483; Schmidt 2008, 307; Finnemore and Sikkink 1998, 906.  
26 Price 1997, 166.  
ideas are more powerful than others? Hawkins, for example, suggests that widely shared norms will be the most enforceable. The discursive approach I laid out above would also predict this. The more people that share an idea, the more people will find arguments linked to that idea convincing, and the more social pressure they will put on other actors to obey that rule. Price and Huysmans are even more suggestive. Their arguments link the strength of an argument to core ideas about humanity, the self, nature and progress. Why would these concepts be more powerful than others? In a discursive framework, these concepts are deeper because they are highly connected in networks of meaning.\(^2^9\) Many other concepts and ideas have to depend on ideas about what constitutes a person. As that concept changes, so too must all the concepts it is connected to. But when that concept is relatively stable, arguments that link to it will tend to be convincing because it is widely shared. Thus, powerful ideas will tap into widely shared, core ideas concerning knowledge, existence, and what it means to be a human being.

Following these leads, I divide discourse into four heuristic types of ideas, each more fundamental than those above it:

1. *Information and Beliefs*: common knowledge, or beliefs about the state of the world and how to solve problems within it. It includes cognitive beliefs about the proper techniques and methods to solve problems as well as theories, facts, models, and representations.

2. *Constitutive Ideas*: constitutive rules that form the basis of organizations and culture as a whole.\(^3^0\) Values and constitutive ideas also delimit the available roles and identities agents can adopt. They make legitimate interests and preference rankings possible. Finally, this level includes the values and norms that form the basis of shared culture, ideologies and meaningful narratives that motivate people in everyday life.

3. *Logic of Action*: the historically constructed ‘social disposition’ of individuals and

\(^{2^9}\) Robert Brandom has recently defended this “holist” approach to meaning at length. See Brandom 1994; Brandom 2000; Wanderer 2008.

\(^{3^0}\) Scott 2008.
other agents. The idea here is that social structures “affect not only actor interests but also the ways actors connect their preferences to policy choices.” Therefore, both procedural and substantive rationality are socially constructed.

4. Episteme and Ontology: The episteme is comprised of the fundamental ideas about what counts as knowable, and how one should go about understanding and building knowledge about the world. An ontology governs the existence of and character of objects. In philosophy, ontology refers to “what exists.” Originally this was restricted to the existence of brute facts. However, since Searle, IR theorists recognize that the construction of “social facts” is an ontological issue. So ontology here refers to ideas about what objects exist and how to represent them. Ontologies are closely related to language, since languages delimit the bounds of the sayable.

These categories can be usefully arrayed in a “generative structure of discourse.”

![Diagram](image)

*Figure 2.1. A generative structure of discourse*

A generative structure is a hierarchical structure in which deeper levels of discourse

---

31 The debate in IR posits three ahistorical ‘logics.’ I think, instead, we should just be open to the many possibilities and alternatives that history presents to us.
32 Kowert and Legro 1996, 463.
33 My debt to Foucault 1970 is obvious; but I am not claiming to be employing his concept exactly.
34 Searle 1995.
place a possibility constraint upon the higher levels. As Ruggie puts it, in a generative structure “the deeper structural levels have causal priority, and the structural levels closer to the surface of visible phenomena take effect only within a context that is already ‘prestructured’ by the deeper levels.”35 In Waltz’s theory, for example, anarchy forms the ‘deep structure’ of international politics because it shapes what happens at higher levels.36

The deeper levels of this structure are powerful in the long run because arguments end only when interlocutors have exhausted their reasons. The deepest and last reasons are ideas about how knowledge is created (epistemic assumptions), what exists in the world (ontological claims), and what the nature of human action is (logics of action). Taken together, I refer to these deeper levels as the ‘cosmology’ of the discourse because they contain the central concepts that order the universe. Berger and Luckmann argue that these ideas are the most powerful because they order experience, set priorities, and embed individual biography within a “cosmic order.”37

This typology of discourse suggests that means and ends (causal beliefs and values) are widely accepted because they are connected to deep cosmological concepts. Indeed, what most IR theorists study (norms, rules, and ideologies) are simply the surface reflections of deeper, more powerful ideas that shape international politics. On my view, if you want to know whether any of these surface arguments are likely to be powerful in the long run, look and see if they resonate with the dominant epistemic arguments, ontological claims, and logics of action. If you want to know whether a certain narrative or

37 Berger and Luckman 1966, 95-103.
ideology will be powerful, test how it answers deep questions about human nature and the universe. If it handles them well then my model would predict that many people will find that narrative convincing in the long run.

The hierarchical structure of discourse does not mean that the deepest levels are immune from change. Since agents and structures are mutually constituted, agents must be able to change the deep levels of discourse. This does not conflict with the theory that the deeper levels have causal priority. First, the priority here follows from the fact that the lower levels exert constraints on higher levels and make certain features of those higher levels more or less likely. This is compatible with the idea that ideas at the higher levels can change the deeper levels, it will just be very difficult. For example, new scientific knowledge can (in fact, did) change ontology or cause us to abandon a historical narrative, but these practices are only able to be meaningful because they draw on other categories and deeply held beliefs. As Gaukroger argues, before science could legitimate itself, it relied on an ideology that explained its value in terms of helping to understand the mind and hand of the creator.38

To see why these mutually constitutive elements are nonetheless in a hierarchy, it is important to consider two things. First, the depth of a concept is a function of its connections to other concepts it is connected to in webs of meaning. Brandom has recently defended this “holist” view of meaning on which “the content of each concept is articulated by its inferential relations to other concepts.”39 The same is true of beliefs: they are connected to one another in webs of belief. As Jonathan Glover points out, when things

go wrong in the course of everyday life, I can question any number of other beliefs to make sense of it. For example, if the medicine the doctor gives me does not work, I can question whether the doctor is any good, whether the pharmacist is any good, challenge my beliefs in Western medicine, or the foundations of the scientific enterprise all together. Those concepts with lots of connections are harder to abandon when they face difficulties because doing so would require revising so many other concepts. Epistemic and ontological concepts are like this: they are bound up with all our other beliefs so thoroughly that it makes sense to say that they are deeper or more foundational. Indeed, ontologies are to some extent embedded in the structure of language itself. Thus, the causal and constitutive arrows move in both directions up and down the generative structure presented here, but the upward constraints are stronger over the short run.

The generative structure of discourse is central to explaining why scientific ideas have transformative, unintended effects on political institutions. Political elites will often only intend to import the causal beliefs of scientific means, but by doing so they also import scientific concepts at the deeper levels of the generative structure. In turn, this exerts pressure on the constitutive ideas and beliefs in political discourses. How does this process unfold?

II. THE POWER OF CLASSICAL SCIENTIFIC DISCOURSE

Since the 17th century, scientific ideas have possessed tremendous authority in political institutions. The massive success of natural science and its technological applications motivates political actors to import scientific methods and modes of thinking in politics.

---

40 Glover 2003, 525.
Once institutionalized in rules and habits, these concepts constrain the way political goals are pursued and valued. It is difficult to precisely capture and theorize the general effects of importing scientific ideas into political institutions. First of all, ideas about science have changed a lot since the sixteenth century. Indeed, there was no enterprise called “science” 500 years ago. Instead, scholars tried to build reliable knowledge about the universe in a practice called “natural philosophy.” Natural philosophy included practices that look a lot like theoretical physics, but also practices like alchemy and astrology that would be labeled ‘pseudo-science’ today. For example, Newton famously uncovered the fundamental laws of gravitation and optics, but he probably spent more time poring over apocryphal religious texts and indulging his interests in alchemy than he ever did on what we would call physics.\(^{41}\) Newton, like most of his contemporaries, believed that study of ancient texts could yield reliable knowledge, just as mathematics and observation could.

Second, while the general authority of science persists throughout the modern era, at any given time one scientific tradition or another acts as a “master science” that dominates the public imagination.\(^{42}\) Newtonian ideas dominated 18\(^{th}\) century Europe, Darwinian thinking and biological metaphors provided the spirit of the age in the 19\(^{th}\) century, and physics returned to prominence in the 20\(^{th}\) century during the atomic age. When a model of science demonstrates success, it is likely to be incorporated into political thinking and policy. Thus, while the authority of science is relatively consistent over 450 years, the way it influences politics changes. Therefore, we need a conception of sci-

\(^{41}\) Bowler and Morus 2005, 48-49.
\(^{42}\) Homer-Dixon 2008.
ence that is flexible and broad enough to account for these changes, but specific enough to do explanatory work. What definition can capture historical specificity and still generalize about the effects of science and politics?

**Classical Scientific Discourse**

For the purposes of this project, I operationalize modern science sociologically as what people perceived science to be, rather than what we, looking back, think it should be. 43 So here, I define science historically and discursively, as a collection of ideas and practices attached to the project of disciplined inquiry aimed at uncovering reliable knowledge about the universe. 44 This project emerged in early modern Europe, but is now a global enterprise, institutionalized in both universities and corporations in every large modern state. My definition includes both natural and social scientific traditions, as well as many theories we might want to label “pseudo-science,” but which, at least for a time, was conferred the authority of science.

This sociological definition of science helps to overcome a central problem with an historical study of science and politics: the ideas and practices of science have change a lot since the 16th century. Indeed, there was no enterprise called “science” 500 years ago. Instead, scholars tried to build reliable knowledge about the universe in a field of study called “natural philosophy.” Natural philosophy included practices that look a lot like theoretical physics, but also included practices that would be labeled pseudo-science today. For example, Newton famously uncovered the fundamental laws of gravitation and

43 On the distinction between normative and sociological definitions, see the discussion of legitimacy in Buchanan and Keohane 2006.

44 Park and Daston 2006, 2-3.
optics, but he probably spent more time poring over apocryphal religious texts and indulge his interests in alchemy than he ever did on what we would call physics.\textsuperscript{45} Newton believed, as many of his contemporaries did, that reliable knowledge could be uncovered by studying ancient texts, just as it could through mathematics and observation.

So we need an operationalization of science that is flexible enough to track outcomes of interest over a long period of time in which diverse practices were recognized as “scientific.” Recent research in the history of science shows that despite differences, this tradition features a group of concepts and practices that have remained part of scientific discourse since 1550, even if their meaning has changed. For example, Daston and Galison show that natural philosophers and scientists consistently strive for “objectivity” but that the concept had a different meaning three hundred years ago.\textsuperscript{46} I refer to this constellation of ideas and methods as “classical scientific discourse” (CSD) or the “classical model of science.” I want to highlight eight features of scientific discourse under the headings of episteme, ontology, and ideology. These features all feature prominently in the secondary literature on the history of science.\textsuperscript{47}

\textit{Episteme: Universal, Objective, and Experimental.} First, scientific discourse is epistemically universalist and objective.\textsuperscript{48} Science strives to discover laws of nature and seeks to build a body of generalizable knowledge that can be applied to many particular cases. This knowledge is discovered via mathematical deduction or experiments according to ‘objective’ standards.\textsuperscript{49} The scientist is to adopt a skeptical attitude, attempt to establish “matters of fact” and strive to submit every be-

\begin{itemize}
\item \textsuperscript{45} Bowler and Morus 2005, 48-49.
\item \textsuperscript{46} Daston and Galison 2007.
\item \textsuperscript{47} Ideally, the discourse of science would be uncovered via an original discourse analysis. One could undertake a discourse analysis of scientific texts and meta-analyses of science drawn from a particular historical period and thereby develop a sociological conception of science that is bounded within its particular historic context. However ideal it is, I am neither qualified nor able to perform the discourse analysis of scientific texts and so I built this model of the classical discourse of science from secondary sources in the history and sociology of science.
\item \textsuperscript{48} Hempel 1966; Cunningham and Williams 1993, 411; Daston 1995.
\item \textsuperscript{49} Kuhn 1977.
\end{itemize}
lief to rigorous tests. Once established, this knowledge can be used by and applied to all societies and cultures.

**Ontology: Reductive, Quantitative, and Ordered.** The demand for mechanical and objective reasoning is often satisfied by reducing complex phenomena to standardized, quantitative units. Numbers are favored because they are universally communicable, impartial, and precise and so lend credibility to knowledge. First, this reductionist ontology permits experimentation because in order to experiment, the reality of interest must be ordered, standardized, and normalized so that it can be measured and tested. Second, this reductionist ontology promotes classification and ordering; in scientific ontologies, organisms and specimens must be arranged in a whole system of identities and differences. This tendency is typified by the disciplines of natural history (the forerunners of geology, botany, and zoology) which catalogued the species of animals and rocks.

**Ideology: Rationalist and Modernist.** Rationalism here refers to the idea, originally attributed to Francis Bacon, that knowledge can and should be used to re-order and change the world. Today this lives on in what James Scott calls ‘high modernism’:

[A] strong, one might even say muscle-bound, version of the self-confidence about scientific and technical progress, the expansion of production, the growing satisfaction of human needs, the mastery of nature (including human nature), and, above all, the rational design of social order commensurate with the scientific understanding of natural laws.

These ideologies are probably not as close to the core of scientific discourse as the episteme and ontology above. However, the episteme and ontology of science are linked to the narratives of the scientific revolution (in which reason triumphs over religion) and the industrial revolution (in which technology conquers nature). So while epistemes and ontologies may have few explicit values, they are connected to these Rationalist and modernist narratives.

CSD includes elements drawn from the traditions of physics, mathematics, and biology.

At any one time, a successful “master science” may emphasize certain features of the CSD, tilting it in one direction or another. As a result, some features of CSD are more

---

51 Cunningham and Williams 1993, 411-412.
52 Porter 1992, 646.
53 Daston 1995, 8-11.
54 Rouse 1987.
56 Gaukroger 2007, 356.
57 Kuhn 1977, 44.
likely to be imported into political institutions during certain historical epochs. In each historical case study that follows, I review the dominant scientific traditions of the time and highlight the features of CSD likely to have an impact on politics.

Scientific ideas enter political institutions in a variety of ways, driven by a variety of motivations. First, political elites may become familiar with scientific theories and tools because they depend on scientific ideologies or advisers who wield expert knowledge. In the 17th century, European monarchs patronized scientific research to legitimate their claims to authoritarian-technocratic rule.\textsuperscript{59} This bred familiarity with scientific ideas and wove them into official state ideologies. Similarly, Louis XIV’s minister Colbert had to familiarize himself with the particulars of fortress engineering and ship building to hold his employees accountable.\textsuperscript{60} Today, political elites must learn about atmospheric science in order to confront the Intergovernmental Panel on Climate Change. World Bank policy spreads scientific thinking because borrower governments must understand economic science to implement projects.

Second, organizations may decide to explicitly use methods developed in the natural and mathematical sciences to solve problems and make political decisions. Robert McNamara explicitly imported operations research and other policy sciences into Pentagon and World Bank decision-making in the 1960s. Today, cost-benefit analysis and other ‘scientific’ techniques dominate public policy.\textsuperscript{61} Of course, organizations may have scientific problem solving methods imposed on them from the outside.

Third, innovative thinkers may simply describe politics in scientific terms. For ex-

\textsuperscript{59} Wuthnow 1979, 220-225.
\textsuperscript{60} Mahoney 2010.
\textsuperscript{61} Fischer 2003; Richardson 2002.
ample, Machiavelli, Bacon, and Hobbes all theorized the role of knowledge and reason in politics. IR scholars continue this tradition by modeling international politics scientifically. To the extent that political elites are socialized into political domains via these texts, they will tend to adopt scientific categories and normative slopes.

Finally, scientific concepts spread throughout the public sphere, where they alter and transform the broader discourse that political institutions are embedded within. The effect of science on discourses shared by all members of a society is subtle but important. Experience with science and technology has spread objective epistemes and reductive ontologies. These have changed the normative slope of society as a whole, supporting ideas like problems are best solved by analysis by small groups of experts who employ generalizable knowledge. Notably, the effects transmitted by this channel are diffuse and not easily subject to conscious control or revision.

My argument below is that as these concepts enter the deep levels of political discourse, the pressure for changes in political means and ends builds. Classical scientific epistemes and ontologies exert pressure on logics of action, encourage the use of universal knowledge, and naturalize the pursuit of objective and calculable ends. The rise of CSD also empowers top-down, expert-driven decision-making with little direct experience of political and social context, but with a claim to superior knowledge of underlying causes. Institutions that are captured by CSD are likely to suffer from a series of pathologies that affect performance and exacerbate democratic legitimation problems. The model creates a constant temptation to oversimplify reality and gives the impression that people and institutions can be manipulated and controlled. While vigilant organizations may be able to resist these temptations and the associated pathologies, it will be
difficult and costly to do so. Why?

Representational Constraints

When classical scientific discourse enters political institutions it introduces “representational constraints” in the way organizations view their environment. All organizations must represent the environment or reality that they intend to intervene in. For example, in order to intervene in the lives of its citizens, the early modern state first had to develop the means to represent them. Scott shows that the early modern state was unable to manipulate society because it could not ‘see’ or ‘read’ society. An illegible or ‘unreadable’ society makes intervention impossible:

An illegible society, then, is a hindrance to any effective intervention by the state, whether the purpose of that intervention is plunder or public welfare. As long as the state’s interest is largely confined to grabbing a few tons of grain and rounding up a few conscripts, the state’s ignorance may not be fatal. When, however, the state’s objective requires changing the daily habits (hygiene or health practices) or work performance (quality labor or machine maintenance) of its citizens, such ignorance can well be disabling. A thoroughly legible society eliminates local monopolies of information and creates a kind of national transparency through the uniformity of codes, identities, statistic, regulations, and measures.62

Scott argues the state rendered its population legible, or visible, via scientific practices of metrical standardization, cartography, and the statistical classification of society. These representations have given the state immense power to control and intervene in people’s lives. Representations are also powerful in a constitutive sense: they help to produce the world and make it seem “objective” and “real.” For example, Mitchell shows that mapping practices in colonial Egypt permitted experts to represent and therefore make an

economy. Practices of representation translated the disparate actions of Egyptian peasants into a disciplined and measurable set of economic activities subject to colonial control.

Technologies of representation depend on the culture of the organization as much as they depend on formal procedural rules. That is, the representations of an organization depend on the concepts embedded in its discourses. Therefore, all institutions have representational constraints in the sense that their dominant ideas and categories pick out some objects and events rather than others as significant. CSD introduces a specific set of ontological and epistemic constraints that make it natural for political institutions to adopt representations that are universalist, reductive, ordered, and quantitative. These representations constrain the goals of organizations by demanding that these goals be measurable and fit into ordered systems.

Alternatively, a political institution dominated by interpretivist social discourse would have a different set of representational constraints. An interpretivist organization would naturally look for intersubjective meanings and shared symbols and represent the world in contextualist, holist, complex, and qualitative ways. Any given intellectual tradition offers only a partial view of reality and so introduces constraints on the way reality is viewed and acted upon. On my view, an ideal political organization would combine a number of different discourses and modes of representation into a varied and complex view of the environment that helps to achieve and continually question its goals.64

64 I return to this theme in chapter 7.
In large organizations, the representational constraints of CSD privilege proxy indicators meant to stand in for more substantive outcomes. For example, libraries are interested in spreading and sharing knowledge, but can easily represent or measure circulation, so this stands in as a proxy for the outcome of interest. There is little chance that a proxy will lead organizations astray if the indicator reliably tracks the outcomes of interest. The more closely the form of the indicator matches the form of the environment, the more successful the proxy will be. The tight fit between the language of mathematics and the laws of nature surely undergirds the success of the natural sciences. Likewise, accounting tools map well onto corporations’ outcomes of interest, profits.

However, in social and political institutions, there is great variation in the capacity of indicators to map onto outcomes. Some social and political outcomes, like “societal welfare” and “peace,” are extremely difficult to define and measure. For example, in the 1990s there was a debate within the UN about how to measure “peace.” Peace could have been defined quantitatively in terms of “violent events,” but this rests on a thin conception of success (the absence of violence) that may be short-lived. After all, if the root causes of violence are unaddressed, violence is likely to return. But the question remained, how could the UN measure “sustainable peace”? The debate is unresolved in part because peace is such a complex concept.

Moreover, the definition of these outcomes is subject to normative and political contestation. Definitions of reality distribute power and so political actors work hard to institutionalize definitions that serve their purposes. Contestation does not always prevent proxies from becoming naturalized and taken-for-granted in political institutions. When a dominant discourse privileges a certain mode of representation, its way of seeing the
world and measuring success can become routinized. If the means and ends do not provide the information for the organization to achieve its goals, the organization will suffer from both practical and normative pathologies. Why do political organizations fall into such representational traps?

**Uncertainty and Classical Scientific Discourse**

I have argued that classical scientific discourse introduces representational constraints that shape the way goals and ends are conceptualized. A powerful objection to the argument thus far is that I have identified the wrong culprit. The problem cannot be scientific methods per se, because these methods *could* be used to better identify the ends of substantive interest. Thus, pathological representational constraints are not inherent to scientific discourse, but an accident, or a corollary of the partisan motivations of political actors.

On the one hand, I concede the point that political exigencies, transaction costs, and economic imperatives often intervene to prevent the scientific method from working as many believe it could or should. On the other hand, I believe that in political institutions there are pressures which lead CSD to have systematic biases that can push its effects of in a harmful direction. In some cases, scientific discourses are beneficial and even necessary.\(^6^5\) However, political institutions are under pressure to deploy extreme versions of CSD that are most likely to fall into representational traps. This creates a negative “normative slope” for the use of scientific models in political institutions that could be

---

\(^6^5\) By this I do not mean to say that CSD has exclusively negative or even “on balance” negative effects. That claim would require a complex system of scorekeeping that I do not undertake here. Of course, CSD has many salutary effects that I do not mean to diminish. But I think these effects are well known so I focus here on the negative case.
climbed but only with considerable risk and high costs.

My argument is that what Dewey called the “quest for certainty” drives political actors to employ oversimplified and modernist versions of CSD that have a high probability of succumbing to pathologies. For cognitive and social reasons, humans must reduce uncertainty to go on in a complex world. As Dewey puts it, “[t]he natural man is impatient with doubt and suspense: he impatiently hurries to be shut of it.” The anxiety of uncertainty encourages humans to take up religious and scientific belief systems that offer comprehensive sets of beliefs and values that make sense of the world. The anxiety of uncertainty and subsequent quest for control is also supported by large literature in psychology. The experiments link stress and anxiety to the desire for control which in turn spurs a search for causal relations. This search for causes is likely to lead to an increased tendency to form causal attributions and an illusory sense of control.

Scientific means that come with rationalist promises and modernist visions offer certainty at both a practical and cosmological level. Practically, they promise control over unpredictable and complex environments. Cosmologically, they supply meaningful goals and values to pursue. Rabb argues that centuries of war and disease in Early Modern Europe created a desire for control that fuelled the scientific revolution. Ross argues that the American social science turned away from historical methods toward positivist scientism in the 1920s. For the Ross, the main driver of this was the general mod-

---

66 Dewey 1929. I am indebted to Michael Neblo for suggesting and pressing me down this line of thinking.
68 Dewey 1929, 255-56.
70 Friedland, Keinan, and Regev 1992; Keinan and Sivan 2001. Keinan links this to the use of magical thinking, but it could just as easily lead to an increase in scientific and pseudo-scientific thinking which offer a sense of control.
ernist crisis provoked by the Great War. The destruction of the war demonstrated the dark side of scientific and technological advance and made people question their faith in visions of unending progress. American social scientists responded with “an effort to make the achievement of science an end in itself and thereby to find order amid historical flux.”\textsuperscript{72} Positivism promised “certain knowledge” and “the power of prediction and control.”\textsuperscript{73}

In the concrete environments of political institutions, the anxiety of uncertainty does more than create a desire for control. It encourages analysts to employ scientific models that offer exact predictions. The abstract, universalist, quantitative, and ordered representations of classical scientific discourse alleviate doubts by giving actors a sense of knowledge and control. This creates trade-offs between what social scientists call “reliability” and “validity.”\textsuperscript{74} A method is “reliable” if it consistently tracks or measures the same phenomenon. A method is valid if it accurately tracks or measures the phenomenon of substantive interest. While scientific methods can be used to create valid indicators and models, the quest for certainty creates a tendency for analysts to use reliable indicators that assuage doubt, but which may or may not validly track the outcomes they are really interested in.

In political organizations dominated by CSD, political actors are likely to trade validity for abstract models that are reliable and easy to operationalize. This is exacerbated by the characteristics of political environments. The realm of politics is constantly flooded with problems and political actors must seek to ameliorate uncertainty with heuristics,

\textsuperscript{72} Ross 1991, 390.
\textsuperscript{73} Ross 1991, 390.
\textsuperscript{74} For an example of these tradeoffs in action, see Neblo’s (forthcoming) discussion of social scientists in democratic politics in his concluding chapter.
models, and lessons from the past. Therefore, political organizations are likely to use simple models rooted in CSD to solve problems in highly uncertain environments. Political organizations are also susceptible to the worst pathologies of CSD because there is a lot of “noise” between the substantive outcome of interest and the models and indicators of analysis. In political environments, outcomes of interest (peace, justice, well-being) are complex and difficult to measure. Exact indicators amenable to universal, ordered representations are unlikely to capture these outcomes well. So while it may be possible for vigilant political institutions to avoid the negative effects of CSD, it will be very difficult to do so in uncertain, complex environments. Moreover, there is a danger that indicators and representations privilege by CSD will become naturalized. Once taken-for-granted, these indicators cannot be easily revised. This hurts the ability of organizations to reflectively respond to problems and learn.

III. FROM MEANS TO ENDS

Representational constraints rooted in classical scientific discourse become particularly problematic when they cause changes in goals that are unnoticed and not easily accessible to the consciousness of political actors. This happens when ideas are naturalized. I define naturalization, following Hopf, as “a social process by which politically contestable outcomes, policies or practices come to be regarded as given.”75 Unintended naturalization of values and goals poses problems for policy effectiveness, organizational learning, accountability, democratic control, and normative evaluation. In this and the next section, I argue these pathologies affect both individual organizations and interna-

75 Hopf 2002b, 409.
tional society as a whole. Processes of means-ends change in specific organizations add up to institutional change at the level international society as a whole. This has serious consequences for global public policy and thus for people all over the world.

Why do scientific means change ends behind the backs or despite the efforts of political actors? How and why do scientific means surreptitiously change political ends? I account for the unintentional aspect of this process by embedding political actors in discourses. Agents draw on discourses to reduce uncertainty and give their actions meaning. Their actions reproduce and change discourse, but because discourses are irreducibly social they depend on the actions of others. Social processes of communication and argumentation shape the content of these discourses in the long run. While an entrepreneur may seek to change discourses intentionally, their success is dependent on change spreading through institutions and organizations in a process that is to some extent beyond their control.

Means-ends Change as Institutionalization

I conceptualize this communicative, discursive process as means-ends change: when the use of tools and methods leads to changes in the goals and values of the individuals or institutions that employ them. I define a means as any knowledge-based tool used to solve problems, including scientific methods, models, theories, and experimental apparatuses. All tools have both material and ideational, or knowledge, components. Ends are objectives, goals, and values. Means and ends are notoriously difficult to differenti-
ate because temporary ends often serve as means to some ultimate end.76 For my purposes, I define an end as any idea that serves as a goal for an individual or institution, regardless of whether or not it is an “ultimate” goal. I focus on the goals and values that dominate, or recur frequently, in a given discourse.

How does simply using a theoretical approach or conceptual tool change discourses? There are two kinds of means-ends change. The first is “fetishization.”77 This is when a means is elevated to the status of an end-in-itself. For example, Habermas argues that economic thinking elevates “efficiency” from a means that helps us accomplish our goals, to an end-in-itself.78 I think of the other means-ends change as a “transfer” in which the properties of the means constrain and alter goals. In this project, I focus on the latter process and especially on how it can unfold surreptitiously, behind the backs of political agents.

The argument can be illustrated with an individual-level analogy. Hamish Stewart, in an extended critique of instrumental rationality, argues that when individuals engage in certain kinds of behavior, they slowly adopt the values and characteristics implicit in their activities.79 Stewart provides a vivid example drawn from a Jack London story about staid Professor Drummond, a sociologist who studies the working class, by living, dancing, and drinking in the rough neighborhoods of San Francisco as “Big” Bill Totts. In time, acting like a fun-loving smoker and drinker turns Professor Drummond into Bill Totts. Stewart uses this story to suggest that when agents make choices about how they

---

76 Dewey called these “ends-in-view” and “ends-in-themselves.” Dewey 1922, 225; Dewey 1939; Whitford 2002.
77 Harrington de Santana 2009.
78 Habermas 1973, 270-75; McCarty 1979.
79 Stewart 1995.
are going to behave they are not just making choices about what to do but about who and what they are going to be. Succinctly put: “what agents do helps make them what they are.”

Similarly, as I show in Chapter 5, Robert McNamara brought in economists to help him change the goals of the World Bank from a focus on growth toward poverty alleviation that would directly improve the lives of the poor. This was meant to move the Bank away from the grand designs of Modernization theory and improve the lives of the poor. However, the technocratic, quantitative and objectivist culture the economists brought with them made it difficult for the Bank to calibrate their policies to ‘subjective’ indicators like poverty alleviation, and the Bank quickly returned to promoting the modernist goal of economic growth.

Institutionalization theory offers a vocabulary to theorize unintended means-ends change. When the term is used in IR, ‘institutionalization’ is usually synonymous with ‘formalization’; a rule or norm is institutionalized when it becomes part of a treaty or IO. However, as I define it here, this is only the first stage of institutionalization. To be institutionalized, the practice or policy in question must be routinized and embedded in collective knowledge by socialization and naturalization processes. In this model, once new ideas are imported into an organization they do not simply spread as unchanged units; rather, they thicken and develop as they are imbued with meaning in the course of everyday communication. Since human agents need to communicate to engage in collective action and since they yearn to make sense of their actions, new ideas and practices

---

80 Stewart 1995, 63. Cf. Taylor 1985 on ‘second-order’ reason. This is not a new idea. Neo-functionalist theory crucially built on the insight that cooperation between states on uncontroversial technical issues would end up changing the agents themselves. Haas 1968; Deutsch 1970.

81 See Zucker 1977.
spur actors to create justifications that explain and legitimate the new phenomena. These processes of communication and argumentation change discourse. Sociologists call this “institutionalization”: the embedding of practices and ideas in formal or informal procedures, rules, and norms. I conceive of institutionalization as unfolding in two distinct stages:

1. **Innovation & Rule-Creation**: New problems, feedback from experience, or external pressures create an impetus for change. Discursive entrepreneurs either invent or imitate ideas and put them on the agenda. Internal power relations and deliberations select certain ideas as solutions to the problem at hand. Innovations are incorporated into rituals and habits or encoded in documents and operational procedures.

2. **Justification & Naturalization**: New policies are contested, argued over, and justified with reasons and evidence. Members are socialized to follow new norms. These social and argumentative processes make the new rules seem “objective” and “real.” Ideas become values and are naturalized when they are linked to the deepest, most taken-for-granted regions of discourse. Naturalization is complete when new practices and ideas are reified and taken as a natural part of the universe.

For the purposes of this analysis, I want to bracket the first stage of institutionalization, the creation of new rules and procedures influenced by CSD. The explicit creation of new policy can usually be explained by principal-agent dynamics, bargaining, organizational structures, coalition politics, path dependencies and other factors emphasized in the extant literature on organizational change. Instead, I focus on explaining the second stage of institutionalization, the naturalization of these rules and their conversion into new values. In the second phase, these ideas are translated into goals and values by everyday talk within organizations and societies. When scientific means are employed, justifications import scientific epistemes, ontologies and ideologies. For example, when ac-

---


83 I am inspired by but not beholden to the model in Tolbert and Zucker 1999.

tors use scientific metaphors to think about political problems, they unintentionally import other concepts and presuppositions those metaphors depend on. More dramatically, a defense of climate science depends on a defense of the scientific method as objective, which in turn draws on a defense of the Enlightenment narrative of science’s triumph over irrationality. This narrative has political implications to the extent that it encourages scientific and technological definitions of progress. The ideas attached to the use of scientific discourse are naturalized when they are linked to the deepest, cosmological levels of discourse. It is then that they attain the effective status of values, which are difficult to challenge because they are linked to the strongest concepts in the discourse.

Why is institutionalization effective in political contexts? Ruggie explains that this process of translating ideas into social facts “transforms behavior by channeling it in one direction as opposed to all others that are theoretically possible.” Or, as Katzenstein puts it, institutionalized ideas create “prefabricated action channels that establish links between the values individuals hold and the problems they seek to solve.” In a narrow sense, institutions establish routines and procedures that steer actors onto certain paths. In a broad sense, once discourses are naturalized in institutions they “create things that are taken for granted and thus limit the range of choice.” Institutionalized discourses delimit the possible and thinkable and serve as resources for action in international society. Their effects on behavior are therefore indirect, but extremely powerful in the long run.

86 Ruggie 1998, 2.
87 Katzenstein 1996, 19.
Scientific ideas rise to power in international society via a series of institutionalization moments: they are incorporated into institutional rules and informal discourses slowly, over the course of 450 years, and then naturalized by communication. Scientific ideas did not simply shape the content of new rules and procedures. Instead, they shape the goals and values of political organizations. The puzzle of surreptitious means-ends change is not solved until we can explain why new rules are translated into new values. An idea becomes a value when it is connected to the deep concepts that order our lives in the universe. CSD is able to naturalize ideas and create values by connecting concepts to the deep episteme and ontology of discourse. Connections to these “cosmological” regions of discourse give concepts a place in the natural order of things and so they become taken-for-granted and valued as things-in-themselves.

How are the links forged between means at higher levels of the generative structure and the deep cosmological concepts? My claim is that institutionalization is driven by processes of argumentation and communication. Concepts are linked to others in discourse by a practice Weldes calls “articulation.” She argues that national interests are socially constructed by linking and unlinking concepts in the broader foreign policy discourse:

[M]eaning is created and temporarily fixed by establishing chains of connotations among different linguistic elements. In this way, different terms and ideas come to connote or to ‘summon’ one another... With their successful repeated articulation, these linguistic elements come to seem as though they are inherently or necessarily connected and the meanings they produce come to seem natural, come to seem an accurate description of reality.\textsuperscript{89}

Simply by talking with one another or making speeches actors create associations be-

\textsuperscript{89} Weldes 1999, 98-99. This is similar to the logic of securitization. See Huysmans 1998.
tween different regions of discourse. In my generative structure, linking ideas to deeper levels of discourse connects them not just to ideas about effectiveness or appropriateness, but to what exists, what human nature is, and how we should go on in the world. This naturalizes ideas by making them seem like a taken-for-granted part of the cosmos. Practices of articulation create discourse change over the long run.90

Why do practices of articulation naturalize when connections are made with scientific discourse? Naturalization is complete when new practices and ideas are reified and taken as a natural part of the universe. Douglas expresses this clearly:

[The] most established institutions, if challenged, are able to rest their claims to legitimacy on their fit with the nature of the universe. A convention is institutionalized when in reply to the question, “Why do you do it like this?” although the first answer may be framed in terms of mutual convenience, in response to further questioning the final answer refers to the way the planets are fixed in the sky or the way that plants or humans or animals naturally behave.91

A fully institutionalized practice must be articulated to ideas about what exists, what human nature is, and how we should go on in the world. Scientific concepts and ideologies are powerful because the episteme and ontology of the classical model make deep claims about what exists in the world and how to build knowledge. It places humanity and nature in an order of the universe. Thus, it offers a comprehensive cosmological belief system that changes the normative slope of discourse. This cosmology makes scientific ideas at higher levels of the generative structure easy to defend in argumentation.

Moreover, classical scientific discourse has a special ability to naturalize ideas because of

---

90 There is an apparent tension between the post-structuralist origin of “articulation” and my reliance on Habermas and Brandom elsewhere. For the purposes of empirical theory, I do not think there is a tension. Both traditions have a communicative ontology. Brandom and Habermas (and Taylor) believe this tradition supports normative truth claims while post-structuralists do not. This is a normative debate that is beyond the scope of the work here. That said, I believe that within the horizon of our lifeworld, we can and should make valid normative claims. Some of these arguments will be better than others, even if we cannot know if the normative arguments are “true” in some historical sense.

its claims to universality and objectivity. Since science uncovers the laws of nature, the objects in its ontologies and representations are easily reified. Once reified, ideas and values are removed from the conscious control of political agents. These properties, combined with the pathologies initiated by the quest for certainty make CSD normatively dangerous.

The Causes of Naturalization

Clearly the effects of CSD on international society are uneven. Some organizations like the World Bank are clearly captured by CSD while others such as the UN appear to be rooted in alternative liberal discourses. Why might some organizations be more likely to surreptitiously naturalize scientific means and ends than others? The answer here might seem obvious: organizations like the World Bank undergo means-ends change because they depend on economists who carry the classical model of science and its concomitant pathologies. I think this is part of the story, but it begs the question why economists are empowered in the domain of economics in the first place. Why is World Bank discourse more amenable to scientific knowledge than the United Nations peace operations?

I argue that scientific ideas are more likely to enter and be naturalized in domains where the environment is can be rendered legible by scientific means. Following Scott and Mitchell, I want to suggest here that organizations which rely on legible representations rooted in CSD are susceptible to means-ends change. Take the example of organi-

---

92 Thus, articulation is more likely to naturalize when the links are made with scientific discourse than with explicitly constructionist discourses such as positivist legal discourse.
zations that rely on proxy indicators in scientific decision-making procedures. In order to measure success of a policy “objectively,” the outcomes of the policy have to be measured in a neutral, usually quantitative manner. This may require the use of proxy indicators (e.g., GDP per capita stands in for quality of life). However, institutionalization dynamics can take over and reify the proxies. This can happen because legible environments permit abstract feedback processes that can isolate experts from the social reality they intervene in. Thus, policies may end up being calibrated to the data instead of to the actual material and social environment. But worse, isolation from the environment makes actors susceptible to unintended means-ends change. Better quality feedback would remind analysts that this is just a proxy and that the real goal is a more substantive outcome.

Legible environments also empower small groups of like-minded experts that are more likely to suffer from poor deliberative quality. This cuts against the intuitive understanding of expert groups. Since expert groups share norms and are highly trained, they should be able to maximize deliberative quality. However, it is precisely these groups that are susceptible to groupthink that reifies proxies. Organizations can avoid this and maintain conscious goal-setting if they continually introduce new participants who are critical of the taken-for-granted organizational culture. These new participants will bring in epistemes and ontologies from outside the organization, thus allowing them to see how discourse had rendered irrelevant goals a natural part of organizational practice. Similarly, organizations and societies are more likely to be conscious of subter-

93 Rouse 1987.
ranean goal changes to the extent that they draw on the ideas of diverse groups of people. People from different professional and personal backgrounds are more likely to have access to different regions of discourse and therefore are more likely to bring different values and cosmologies to the table.\textsuperscript{95} Deliberating about ends in diverse groups denaturalizes more assumptions and thereby prevents the final stages of institutionalization.\textsuperscript{96} Turning this around, it is easy to see that the groups most susceptible to means-ends capture are small groups that are all socialized into the same way of seeing the world. Thus, epistemic communities are more likely to be subject to these dynamics because their shared consensual knowledge has trained all their members to think in the same way.

For example, as I show in Chapter 5, means-ends change in the World Bank was caused by an overreliance on a like-minded group of economists who employed quantitative data that oversimplified social and economic reality. The scientific methods employed by the World Bank render borrowing societies legible or readable. Economists can understand human consumption and exchange easily because money translates the blooming and buzzing confusion of life into price information. This empowers experts who can now intervene at a distance.\textsuperscript{97} Thus, during the 1980s, economists set policy from Washington with little good quality feedback from the ground.

The argument here is that the more legible an environment, the more likely it is that technical experts will be empowered, deliberative diversity will decline, and unintended

\textsuperscript{95} Page 2007; Kollman, Miller, and Page 2000; Hong and Page 2004. This literature argues that diverse groups are better at coming up with solutions or new methods. My suggestion is that the same logic applies to coming up with and maintaining good goals.

\textsuperscript{96} Mercier and Landemore 2012; Landemore 2012.

\textsuperscript{97} Scott 1998, 99.
goals will be naturalized. But legibility is not solely a function of the features of the environment. While it is probably true that some environments are easier to represent in scientific terms, legibility is also a function of the organizational culture, especially its dominant episteme and ontology.

MacKenzie confronts these issues in his work on performativity in economic theory. He argues that economic theory can work as a speech act that does not passively describe the world, but actively changes it. Bankers and investors can “perform” economic theory, which of course confirms the theory, but in a misleading way. MacKenzie and his colleagues document the strange effects that the Nobel-prize winning Black-Scholes-Merton option-pricing theory had on financial markets. Over time, as the theory of option-pricing spread, there was increasing convergence between the theory and the empirical data. The predictive abilities of the model therefore got better over time. MacKenzie and Millo argue that this was because the theory was performed and thus made true via a self-fulfilling prophecy. The upshot here is that the legibility of the supposedly material environment of the options market was in part a function of the internalization of the representation of that reality by human agents. It is this kind of factor that regulates whether or not science can dominate a discourse that functional arguments rely on. In sum, organizations that have legible environments which empower small groups of experts are the most likely to naturalize scientific values.

---

IV. INSTITUTIONALIZATION AND INTERNATIONAL CHANGE

At this point one might object that my argument so far does little more than update the logic of Weberian rationalization theory via Berger and Luckmann, Habermas, and Scott. My argument is more ambitious and, I think, more important. Whereas these thinkers have explored the negative effects of scientific discourse and processes of institutionalization at the domestic level, here I want to explain the rise of scientific ideas and pathologies at the international level. Arguably, the international level is the most important case for this argument for reasons laid out by Meyer and others. Since the Second World War, the organizations and discourses at the international level have become increasingly autonomous. International institutions now exert downward pressure on the institutions and values of domestic societies. The effects of scientific discourse on international politics have consequences for policy decisions and the welfare of people the world over.

In this section, I argue that the culture of international politics is likely to be dominated by scientific ideas because of the peculiar social properties of international society. International organizations and discourses are run and reproduced by a global elite that shares an autonomous and relatively coherent “global lifeworld.” This cultural background is thinner than domestic cultures and is susceptible to classical scientific discourse because the shared experiences of the global elite are those of global technological and economic modernity, rather than a rich solidarity rooted in common language or religious traditions. As a result, since the 17th century, scientific ideas have moved into and changed political institutions; in the aggregate this spills-over into change in the cul-

---

100 Meyer et al 1997; Drori et al 2003.
tural content of international society.

The Institutions of International Society

International society is a heterogeneous social system that includes states bound together by common rules and international law, international organizations, non-governmental organizations, and other civil society groups like think tanks and global universities.\(^\text{101}\) That is, it includes a variety of changing institutions. Institutions can be defined as the formal and informal rules, conventions, norms, procedures, and cultural schemas that pattern social life. This broad definition includes both formal organizations as well as simple informal routines and practices. Institutions depend on ideational structures carried by human agents.\(^\text{102}\) Thus, institutions are more than just the rules in their charters: “The official design is always supplemented by an informal structure, which is composed of attitudes, relationships, and practices that arise in the course of social interaction.”\(^\text{103}\) This follows because institutions have to be connected to the lives of real people and so “[a] social reality must be created, and that reality, which has its own dynamic and its own imperatives, lends texture to the organization.”\(^\text{104}\) This is just as true for international organizations which must be bound to the lives of diplomats,

\(^{101}\) There is some debate between the appropriate way to conceive of the differences between International and World Society (Brown 2001). On my view, the rift is overblown. Both approaches share the same underlying ontology that combines powerful institutions and ideational ties. While a state-centric model may be appropriate for the analysis of the 18\(^{th}\) century, it cannot account for important outcomes of interest in the late 20\(^{th}\) century. The rise of international organizations and private authority make complex models that center on policy domains more appropriate. A single view of international society that is flexible can accommodate both models.

\(^{102}\) Schmidt 2008.

\(^{103}\) Selznick 1992, 235.

\(^{104}\) Selznick 1992, 235.
UN workers, and World Bank aid recipients. States are also more than just the organizations that govern; they are also comprised of the practices and discourses that symbolically constitute the state as more than an aggregation of individuals. For example, Seleny argues that despite sharing formal institutional features, democracies in Eastern Europe actually behave quite differently because of variation in underlying power relations, historical tendencies, and national values.

As a result, the institutions of international society are shaped by and reproduce discourses. Networks of institutions, often called regimes, have their own relatively autonomous sub-discourse. But these sub-discourses are nonetheless connected to one another as individuals carry ideas across the boundaries between them. So sub-discourses are not entirely independent of one another and ideas circulate throughout international society. For example, the development discourse is relatively autonomous from security or human rights discourse, but changes in other regions of international society may eventually filter into and change the deepest levels of development discourse, which in turn exerts pressure on the means and ends of specific development projects.

The discourses of international society are bound together by shared elite networks, communities of experts, and interaction between the various kinds of institutions. The global elite govern the institutions of international society with the horizon of a “global lifeworld.” I distinguish between the global lifeworld and world culture. Whereas world culture would be the shared knowledge and practices of all humans, the global lifeworld supports the knowledge and practices of a global elite that operates within and around

---

106 Wendt 1999, Ch. 5; Ruggie 1993, 157-160.  
107 Seleny 1999.
The lifeworld at the international level is thinner than domestic lifeworlds. Domestic lifeworlds are shaped by higher levels of interaction and backed by the integrating power of the state. Nevertheless, the shared educational background and socialization of individuals into the service of modern governments and public sector bureaucracies creates a thin substratum of shared ideas. Within specific organizations, the lifeworld can become quite thick.108 However, interactions between states and international organizations, or between any two types of international institutions, are likely to be governed only by a thin lifeworld.

The discourses of the global lifeworld shape behavior both indirectly, by rendering alternatives unthinkable, and directly, by making some arguments more convincing than others. Both mechanisms have the tendency to steer social action in certain directions rather than others over the long run. But in the short-run, as Ruggie points out, the direct effects can be quite strong or quite weak depending on the degree to which agents are constituted by and share the relevant discourses.109 As Habermas and Berger and Luckmann argue, social enforcement mechanisms will only constrain social actors when actors share thick lifeworlds or interact in highly institutionalized settings.110

That is, ideational theories must only rely on social enforcement mechanisms when social theory predicts they will work: when culture is widely shared or in highly institutionalized settings. Many International Relations scholars do not heed this warning and simply graft domestic theories onto international politics without recognizing that inter-

---

110 Berger and Luckman 1966.
national society is far less integrated than domestic societies.\textsuperscript{111} That is, there are more worldviews and values in circulation and so it is less likely that some shared cultural background will provide a strong social foundation for social mechanisms.\textsuperscript{112}

This was not always the case. For example, in the 16\textsuperscript{th} and 17\textsuperscript{th} century, a common European aristocratic culture formed a thick substrate for international society. Indeed, as Bull argues, all societies of states are “founded upon a common culture or civilisation, or at least on some of the elements of such a civilisation: a common language, a common epistemology and understanding of the universe, a common religion, a common ethical code, a common aesthetic or artistic tradition.”\textsuperscript{113} A common culture works to ease communication and facilitate the articulation of rules and institutions central to international society. It could also undergird robust social mechanisms that enforced costly rules.

However, writing in the 1970s, Bull worried that as the post-colonial states rose to power and entered international society, they would undermine the common culture and this would mean the dissolution of international order necessary for human flourishing.\textsuperscript{114} Interestingly, Bull himself presciently postulated that the culture of modernity might save the system by providing a new basis for international society:

We must say that in this world international society there is at least a diplomatic or elite culture comprising the common intellectual culture of modernity: some

\textsuperscript{112} I still think constructivists can make ambitious claims about the content and integration of global politics, but constructivist theory must keep both these points in mind and i) stay close to real institutions that socialize actors and reproduce discourses and ii) back up assumptions about the content of international society with empirical demonstrations.
\textsuperscript{113} Bull 1977, 15.
\textsuperscript{114} Bull 1977, 304.
common languages, principally English, a common scientific understanding of the world, certain common notions and techniques that derive from the universal espousal by governments in the modern world of economic development and their universal involvement in modern technology.\textsuperscript{115}

Here, Bull suggests that what states have in common is not a thick common artistic and religious heritage, but a thin lifeworld founded upon the shared experience of scientific and technological modernity.

If Bull is right, this cuts against the standard view that the common cultural content of international society is dominated by liberal ideas. Human rights, democratic institutions, and liberal economic norms seem to form the basis of international politics.\textsuperscript{116} Liberal ideas are undoubtedly important in international society, but there are reasons to believe that the dominance of liberal ideas rests on a thin basis and is likely to change in the coming years. The dominance of liberal ideas in international society is rooted in the American power and Western dominance of international organizations. The prominence of liberal ideas is not backed by shared agreement amongst states. Scientific and technological ideas, however, are backed by the shared experience of states and an increasing faith in the power of science and technology.

In the thin lifeworld of international society, scientific ideas are more likely to be shared. Therefore, they are more likely to be naturalized. The international discourses are then more susceptible to the pathologies of scientific discourse. International organizations are more likely to seek legible representations of reality that all states and bureaucrats will find reasonable and authoritative. They are more likely to defer to experts

\textsuperscript{115} Bull 1977, 305. Right after this he argues it may not go deep enough to hold up the international system. I think it is.

\textsuperscript{116} Wendt 1999; Ikenberry 2001; Paris 2002; Frederking 2003.
who lack intimate, on-the-ground knowledge of social conditions. This is worrisome as international society becomes more autonomous and exerts greater influence on domestic policy. It will privilege scientific and technological modernity, creating pressures that will contribute the homogenization of societies.

Even more disconcertingly, the naturalization of economic goals defined as scientific and technological progress unfolds behind the backs of political elites and publics. The dynamics of international change are beyond the conscious or democratic control of political institutions. Rural farmers in Asia and Africa have no access to, let alone any capacity to understand and intervene in, the lifeworld that shapes global public policy. Billions of people are caught in a world that, while socially constructed, is not of their making.

International Change as Institutionalization

In the preceding sections I have laid out a theory of how and why scientific ideas enter political institutions. The rise of scientific ideas in organizations changes values because CSD introduces representational constraints that are naturalized by communication processes. In this section, I want to suggest how the same process unfolds at the level of international society as a whole. How does this process work at the international level, where the shared lifeworld is thinner than in domestic societies where most of the social theory I draw on was created?

Change in international society can be conceived of as a series of institutionalization moments. That is, it is a process of importing ideas into institutions which back those ideas with resources. This gives the effervescent changes of social life permanence and
stability. Ideational change is happening all the time as agents reconfigure their personal narratives and come up with original conjunctions of concepts. However, this rarely if ever translates into social change because these ideas are not transmitted or reproduced by real institutions and organizations.

Scientific ideas spread and gain in power as they become incorporated into the core institutions of international society. To make this more concrete, I think that international society is grounded in three sets of institutions:

1) International Law and Organizations;
2) State governments and bureaucracies;
3) Global civil society, including foreign policy think tanks, academic institutions, and non-governmental organizations.\(^{117}\)

This list is intended to represent the core institutions that carry, reproduce, and manage the international system. It refers to specific persons, documents, office buildings, and book presses that are the material sites of discourse. These are the sources of cultural practices of meaning making at the international level.\(^{118}\)

The institutions are listed in order of their importance to global discourse. International law and international organizations are central because they represent consensus among many states and thus embody discursive overlap between states. Even if specific institutions or laws are imposed on states they are still intelligible to all members, and thus are relevant to uncovering the underlying discourse of international society. State foreign policy discourses are obviously central because state practices are still the core of international politics, the increasing role of global civil society and international organizations notwithstanding. The texts of foreign policy decision-making reveal the explicit

\(^{117}\) An expanded analysis would embed these in the institutions of Global Culture: 4) Global political opinion as expressed in the media and non-fiction work; 5) Global artistic and literary establishment.

values and methods that guide the pursuit of state interests. The policies of core institutions are shaped importantly by work in the global networks of universities and think tanks. Decision-making elites are educated and socialized by these same universities and institutes. Moreover, as the complexity of public policy rises, states and elites depend directly on expertise from think tanks, non-governmental organizations, and professors.

International discourses and international institutions are mutually constitutive. On the one hand, discourses shape the behavior of these institutions. For example, there is considerable top-down pressure on states and international organizations to adopt scientific ideas. On the other hand, discourses are carried by these institutions and so ideational changes in institutions spill-over into changes in international discourses. Since global culture supervenes on and flows out of these institutions, international change is institutional change in the aggregate. When large numbers of institutions take up scientific ideas, this makes the content of international discourses more scientific.

The causes of change at the international level are macro-level versions of the causes at the organizational level. Earlier I argued that in organizations, argumentation and communication caused means to transform ends when deliberative quality was poor and small groups of like-minded experts were empowered. Similarly, communication processes are likely to naturalize scientific representations because the global elite is bound together by the shared the experience of modernity. Elites from the U.S. and China do not share explicit or implicit liberal beliefs, but they do share an explicit faith in

120 Stone 2008.
121 Drori et al 2003.
scientific and technological progress. This shared faith is rooted in the episteme and ontology of CSD. Since reasons rooted in CSD are accessible to many members of the global elite, science is likely to be authoritative at the international level. Scientific and technological reasons will be the most powerful and this will shape outcomes over the long run. Since powerful liberal states created and continue to back the core institutions of international society, these institutions continue to support liberal values and norms. However, as non-liberal states rise, the core values and norms of international society are likely to become more abstract, calculable, and modernist. After all, the U.S. and China cannot agree on human rights but it can agree on the desirability of scientific and technological progress measured in terms of gross domestic product.

V. METHODOLOGY AND RESEARCH DESIGN

My argument is that scientific ideas change the deepest epistemic and ontological levels of political discourse and this has an effect on values and ends. The key causal factors in this argument are the representational constraints of CSD and the process of argumentation as shaped by institutional factors like deliberative diversity. How can we assess this argument? My empirical work combines elements of a comparative case study design with discourse analysis. Within each case, I perform a two-step analysis. In the first step, discourse analysis establishes change in values over time. In a second step, I employ process tracing within each case to explain these changes. The cases are arranged so as to isolate key causal properties and outcomes of interest.

122 Thus, it serves the purposes of descriptive inference; it establishes the explanandum. King, Keohane, and Verba 1994, 34, 55.
Case Study Design and Selection

In the empirical chapters I investigate the rise and effects of scientific ideas in four case studies from 1550 until 2010. I selected these cases with three goals in mind. First, to denaturalize scientific means-ends change, I perform a historical analysis that tracked the changes in political discourse over time. To demonstrate the long-term effects of science on international society I selected four chronologically ordered case studies that show the rise of science and its various effects on ends and values.

Second, to explain variation on the dependent variable, I investigate international society before and after the scientific revolution (in chapter 3), and an international organization that has resisted or disrupted scientific means-ends change (chapter 6). The comparison between early modern and late modern politics shows a drastic shift from the religious, dynastic values of the 16th century to the scientific, modern values of the 20th century. The comparison I draw between the World Bank (where science changes the discourse radically between the 1960s and the 1980s) and UN peace operations (where science only changes the discourse marginally in the 1990s) allows me to explore the variation in observed outcomes.124

Third, to demonstrate the generalizability of my claims, I employ both easy and hard cases.125 The easiest cases are in regimes where survival is not at stake and which technical knowledge of a material reality is needed to solve problems. For example, it is ob-

---
124 If the two cases have different outcomes, but are alike in ways x, y, and z, then we can eliminate these as explanations for the variance. In the technical language of case study analysis this is the “method of difference.” This method “attempts to identify [similar] independent variables associated with different outcomes” and thus eliminate the independent variable as a complete explanation for the variance in outcomes. George and Bennett 2004, 153. Cf. King, Keohane, and Verba 1994, 108.
125 George and Bennett 2004, 121.
vious that the environmental regime depends on scientific knowledge.\footnote{Haas 1992b. I have left out an environmental case study for this reason, though I hope to elaborate on the implications of the argument for the environment in future work.} After all, the underlying reality of interest is material, not social, and so is amenable to scientific study. The World Bank offers a tougher case than the environmental domain because the reality it must model and manipulate is fundamentally a social reality of individuals and communities. I also included two cases from the security domain (power politics in the early modern Europe and UN peace operations) to see how my argument fared in tougher cases where we might expect that the realities of life and death would overdetermine outcomes. If classical scientific discourse gains a foothold here, where we would not expect it, we can expect it to be important in other places.\footnote{My cases also demonstrate linkages across the core institutions of international society. The cases of Early Modern Europe and the British Empire show how changes in state policy spill over into international politics. The cases of the World Bank and UN peace operations show how international organizations shape state discourses.}

**Discourse Analysis**

Since my main claim is about how and why values change, I must study the language and practices in which these values are articulated and revealed. The methodological ideal in this situation would be to perform an ethnography. As Hopf explains, ethnographic observation offers the best chance to reveal the actual practices of social life.\footnote{Hopf 2007.} It would reveal the processes of communication, the actual practices of argumentation used to justify new rules and transform them into values. However, the historical nature of this analysis precludes ethnographic methods. In the absence of this ideal, discourse analysis offers the best chance to map actual practices. Discourse analysis reveals
historical discourses from their traces in linguistic evidence.

Within each case I perform a discourse analysis on concrete institutions to measure change in means and ends and then look into the history of each to uncover process evidence that can help to confirm the presence or absence of key causal factors that the overall comparison does not establish.\(^{129}\)

Since I believe that discourse is constitutive of all social reality, including text and artifact, I assert that traces of a discourse are evident in everything written, printed, and represented within its reach.\(^{130}\) I expect that to the extent that CSD has moved into political discourse, these changes will be evident in relevant texts. That is, technical and scientific means should be suggested and defended more frequently and the ends of politics should be increasingly universal, reductive, calculable, and modernist.

How can this be measured? Discourse analysis is an empirical method for uncovering the underlying rules and concepts that structure meaning and shape outcomes.\(^{131}\) I started by adopting the discourse analysis methods of Hopf’s study of Soviet identity to the case here.\(^{132}\) In each case, I built a database of documents around the core institutions in international society:

1) International Law and Organizations
2) State governments and bureaucracies
3) Global civil society, including foreign policy elites and academia.

I study primary documents in each of these institutions to approximate the practices of communication taking place in each institution.

However, discourse analysis has its limitations: it is not replicable and therefore ir-

\(^{129}\) Flyvberg 2006, 230.
\(^{130}\) Angenot 2004.
\(^{131}\) Milliken 1999; Hopf 2002a.
\(^{132}\) Hopf 2002a.
reducibly ‘subjective.’ These problems cannot be eliminated because a well-trained and attentive analyst must perform the rich interpretation of texts. However, I mitigate these problems with text sampling techniques. Whenever possible, I tried to minimize subjectivity and maximize replicability by selecting documents randomly or arbitrarily. For example, in chapters 3, 5, and 6 I first manually selected the central texts from and removed them from the database. I then gave the remaining documents in the database a number and generated a list of random numbers, each of which corresponded to a specific document. In Chapter 4, I did not have enough documents to create a large sample, so I simply read all the documents in collections edited and organized by others. I then qualitatively analyzed this sample by reading the texts closely.

I took notes under headings for the following questions designed to uncover the means-ends discourse:

**Discourse Analysis Questions: Means**

1.1) Episteme: What types of knowledge should be used to solve problems?
1.2) Ontology: What are the objects in the world and how can they be changed?
1.3) Ideology: What types of means should be used?

**Discourse Analysis Questions: Ends**

2.1) Episteme: What justifies the ends we have?
2.2) Ontology: How do these ends fit into the world?
2.3) Ideology: What are the ends of action?

I expect this analysis to uncover observable implications of my theoretical argument. These questions are designed to allow me to infer changes in the deep levels of discourse over time. After assessing the change in episteme and ontology and the effects the higher levels of discourse (logics of action, constitutive ideas and information and beliefs), I

---

133 This is not even quasi-random selection, but is at least “arbitrary.”
delved deeper into the history of each case to see what drove these cases.

In the end, I hope the findings of the cases add up to more than the sum of their parts. Each case shows a process of means-ends change within a specific time period or organization. But together, they point to a macro-level process of international change. By delineating this process in four moments, the cases that follow offer a window into how changes in individual institutions add up to change in international society as a whole.
REFERENCES


Chapter 3

God, Glory and the Balance of Power
Scientific Discourse and European Power Politics, 1550-1850

“An age of mechanistic philosophy in which Newton was King, Locke, Voltaire, and Montesquieu the royal advisers, and in which the religious vogue of Deism…relegated God to the role of retired watchmaker of the universe was anything but hostile to the logic of balancing power.”

- Edward V. Gulick¹

I. INTRODUCTION

It is striking how much the European international system changed in the two hundred years between 1550 and 1750. In 1550, states were embroiled in never-ending religious and dynastic wars regulated by complex kinship rules and codes of honor. Between 1494 and 1559, dynastic struggles between the French House of Valois and the Italian Hapsburgs bankrupted both houses and resulted in essentially no territorial change.² During this period, the dominant concepts of European diplomacy and war were borrowed from the medieval aristocratic culture shared by European elites. Political action was motivated and justified by a discourse that privileged saving souls, honor, glory, and the good of the dynasty. However, by the 18th century, “[t]he role of Master concept had passed from tradition to reason. Rationality, not traditionality, was the

¹ Gulick 1955, 24.
main characteristic of that discourse.”

What explains this change? One intuitive explanation is a ‘rationalist-functionalist’ argument on which states slowly learn that they must attend to their interests and guard the balance of power in order to survive in a competitive environment. This argument cannot explain the historical shift outlined above. First, on the material side, it is not clear that the environmental pressures in early modern Europe were strong enough to force evolution or learning. Edward Gulick, for example, argues that war had little impact on the composition of the system post-Westphalia:

[I]n the period from 1648 to 1792, there were, generally speaking, no great territorial changes in continental Europe, except for the first partition of Poland. We note some minor changes: the ‘corrections’ of European territory by Louis XIV, the Spanish Netherlands becoming the Austrian Netherlands, Gilbraltar and Minorca being taken by Britain, Silesia seized and secured by Prussia, and certain Ottoman areas going to Russia... Wars, an all-too-familiar disfigurement of the seventeenth and eighteenth centuries, repeatedly ended in restoration of either the status quo or a close approximation of it.

If survival and territorial losses were not at stake, it seems unlikely that material pressures were strong enough to drive a process of selection. Second, on the ideational side, such an account cannot explain how material reality is translated into an intersubjective reality that motivates actors and ties them together. Even if we were to admit strong environmental pressures to value interests and the balance, a reliable historical explanation of these changes must explain the discursive changes that enabled these concepts to emerge. In order for political actors to realize and calculate their interests, they must

---

3 Osiander 1994, 103.
4 Waltz 1979.
5 Gulick 1955, 39.
6 Wendt 1999.
have these concepts available to them. The rational-functionalist account leaves the processes and mechanisms of this ideational change in a black box.

Following a tradition in ideational International Relations theory, I argue that ideas are necessary to explain the fundamental transformations of international politics. I show how a strategic culture rooted in interests and the balance of power emerged in Europe because modern scientific thinking and concepts transformed the deep levels of political discourse, eroding the religious and dynastic discourses which had heretofore constituted political action. Political elites like Colbert incorporated engineers and political economists into the state bureaucracy. These actors imported scientific concepts into political discourse. That is, the introduction of scientific methods and thinking into early modern European politics changed the deep epistemic and ontological levels of discourse, which in turn changed political logics of action, values and beliefs. In terms of the generative structure of discourse, changes in the deepest, cosmological level of discourse created pressures for changes in the higher levels. First, the goals of instrumental action ceased to be circumscribed by religious and dynastic discourses. Second, the means and ends of action became more empirical, mathematical, abstract, objective, and ordered as they were reconstituted by scientific ideas. This paved the way for the rise of the “interests” discourse which in turn supported balance of power thinking.

II. BEFORE SCIENCE: GOD, GLORY, AND THE DYNASTY

What we call science today was, in the 16th and 17th centuries a loose amalgam of practices under the titles natural philosophy, natural history, arithmetic, and geometry.

---

Between 1550 and 1850, these practices were yoked together under the umbrella of the “natural sciences.” As this set of practices demonstrated its usefulness in the industrial revolution, its discourses developed a broad cultural authority.\textsuperscript{8} The success and authority of the sciences led people in a wide variety of practical and cultural spheres to take up scientific ideas to solve problems and achieve their ends.

What were the main features of political discourses before the consolidation and spread of scientific practices? In this section I argue that in 1550 the discourse of international society is dominated by religious and dynastic themes that constitute a casuist episteme and an organicist ontology. The dominant ideologies and ends of the period are similarly structured by religious thinking centered on saving souls and dynastic traditions centered on the quest for glory and honor, which combined aristocratic, organicist themes and elements of the neo-classical movement grounded in Greco-Roman culture.\textsuperscript{9} As the practices of natural philosophy gained coherence and authority, political actors imported scientific ideas to solve problems and legitimate their rule. New epistemic and ontological concepts spread into politics, reconstituted the deepest levels of the discursive structure, and paved the way for the interests discourse to emerge. The organicist cosmology of the late renaissance was thus displaced by the rationalist, ordered, and substance-based cosmology of the modern era.

Religious and Dynastic Discourses in Early Modern Europe, 1550-1600

First, in the Renaissance episteme, the Bible was the most authoritative place for rea-
sons and evidence. Walzer characterizes this as a “casuist” doctrine on which knowledge is established by comparing the Bible with history, to divine what is right and proper. Since history was “the theater of God’s judgment” it could be called upon to provide evidence of his will. For casuists, the interpretation of history is a “religious act.”

Take for example the then famous protestant polemic *Vindicae contra tyrannos* attributed to Philippe du Plessis du Mornay, who served as an advisor to the French King Henry of Navarre. Mornay invokes and cites the authority of the Holy Scripture to argue that Protestant resistance to Catholic tyranny was justified. Mornay argues that Biblical descriptions of coronations reveal a twofold covenant: one between God, the people, and the King that establishes the people as God’s people and a second between the King and the people in which the people promise to obey the King. But for Mornay, the first covenant is primary and if the King forces the people to be ungodly then they may rebel, to restore the rightful covenant with God. Mornay also invokes historical events and empirical facts. But in accordance with casuist methods even the use of empirical elements can be seen as fundamentally religious. Empirical facts revealed God’s will on earth and therefore helped to discern what actions were legitimate and likely to be successful.

Even casuist practice of relying on scriptural evidence, though, is a shift won by Protestants against Catholics. The Council of Trent, for example, defends the authority

---

10 Walzer 1971 [1965], 75.
11 Mornay 1969 [1579], 148.
12 Mornay 1969 [1579], 164-66.
of Holy Council, a body of religious elites, in all matters of scriptural interpretation.\textsuperscript{13} Protestants, by contrast, argued like Beze that “all points of difference may be judged and decided according to the simple words of God as contained in the Old and New Testament, since our faith can be founded on this alone.”\textsuperscript{14} The belief that God orders and controls the world went a long way to bolstering religious values and ends.

Second, in Renaissance ontology the importance of the aristocracy was derived from their connection to the land, which was maintained via dynastic bloodlines. Dynastic discourse placed a high value on marriage and kinship because it established blood relations between people of higher birth than the other classes. The existence and rights of the nobility was justified and legitimated with reference to their blood:

\begin{quote}
[T]he honor due to the birth and services of the nobility, which has always been esteemed as the right hand of his state, should be fully upheld, so that the nobility may be all the more tightly bound to give generously of its blood, of which it has always seemed prodigal enough when it has been necessary to shed it in service of the King and his state.\textsuperscript{15}
\end{quote}

After the murder of an English baron, Queen Elizabeth I told her brother James she was shocked that a lowly Scot would “dare violate his hands on any of our noble bloude.”\textsuperscript{16} These kinds of statements reveal the links between blood and nobility in organicist metaphors.

Organicist ontology conceived of most things as “bodies” or “living organisms.”\textsuperscript{17} As an Italian diplomat puts it “nothing is more certain than that every living thing (includ-
ing kingdoms and empires) has a beginning, middle, and an end, or, you might say, a growth, maturity, and decline.” Organicist metaphors could be used to fuel religious conflict by describing enemies as a disease or plague. In 1572 Pope Gregory urges the King of France “to follow the path which he has opened and to cleanse and purge completely the Kingdom from the plague of the Huguenots.” But the murder of people was not really seen as a scientific medical procedure, but as a mythical, ritual purification.

Jacques Auguste de Thou, a 16th century historian who chronicled the French Civil War, describes the rituals used to purify the body of a murdered Huguenot: his dead body was “tortured with all the elements, since he was killed upon the earth, thrown into the water, placed upon the fire, and finally put to hang in the air.” This “served as a spectacle to gratify the hate of many and arouse the just indignation of many others.”

This organicist and religious cosmology supported ideologies and values at higher levels of the generative structure. First, the discourse analysis shows that in the wars of the Reformation militiamen fought for religious ends, that is, to establish or reestablish the true religion, as they saw it. The Catholic League, a fierce partisan in the French Civil Wars, formed an association to “re-establish the law of God in its entirety restore and maintain its holy service in the form and manner of the Holy Catholic Church.” The League made its members swear an oath “by God... on the pain of anathematisation and perpetual damnation” to fight “until the last drop of my blood.” Organicism was linked to and thereby supported religious ends.

---

18 Bernardo 1970 [1592]
19 Pope Gregory XIII 1931 [1572], 95.
20 Lincoln 1989, 97-100.
21 de Thou 1904 [1659], 26.
22 Catholic League 1997 [1576], 171.
Obviously religious ends had to compete with the pursuit of wealth and prosperity. The Council of Trent had to admonish priests to concern themselves with the “salvation of souls,” rather than enriching themselves with “vanities.” Writers on the war in the Low Countries argued that peace was necessary to restore “prosperity,” “old rights and privileges,” economic “flourishing,” and trade. But in some instances, pecuniary self-interest had to compete with religious interest. One writer on the French Civil Wars argued that “long and continuous wars and civil strife have weakened our Kings and reduced them to such need they of themselves can no longer sustain the expenditure that is suitable and expedient for the preservation of our religion.” While political actors were often motivated by money and private interest, they were also strongly motivated by religious ends. Self-interest, especially monetary self-interest, was one end among many.

Political discourse was also profoundly shaped by dynastic discourses. States as such did not yet exist in 1550, or even really in 1648. Instead, the early modern European system was made up of a wide variety of political units: dynasties, empires, city-states, electorates, duchies, and principalities all existed in a system with multiple, overlapping authorities. The central units of dynastic early modern Europe were royal houses or families. These houses competed with one another to expand and aggrandize their families through wars and diplomatic maneuvers. Luard describes dynasticism in terms of an analogy with domestic aristocratic values:

Just as, within states, the great magnates and even less nobles and squires were

---

23 Council of Trent 1965 [1545], 102-03.
24 N/A 1974 [1567]; States of Holland 1974 [1573], 102-104.
25 League of Peronne 1997 [1576], 172.
concerned to win advancement for their own houses by the acquisition of title to
great estates, whether by marriage, patronage or seizure, so among states the
rulers sought, by skillful matrimony, by ingenious claims, or if necessary by con-
quest, to add the territories and titles of the royal house.27

Since dynasticism was an institutionalization of kinship ties, marriage could be just as
powerful as conquest. Marriage could transmit territorial rights because political power
was a form of inheritable property, just like any other familial asset. This “made mar-
riage a primary means to strategic ends.”28 When dynasties wanted to achieve strategic
goals, they did so through dynastic rules. They staked a claim to a piece of territory
through dynastic law, or sought a favorable marriage to deliver the territory. Marriage
rules were often more effective than war at securing stable political goals.29 For example,
the threat posed by France in the early 16th century spurred the Austrian Hapsburgs to
forge a dynastic link to Spain. The product of this marriage was Charles V who inherited
more territory than any other monarch had ever been able to secure by war.30 All the
wars of Louis XIV never accumulated as much territory as was bequeathed to Charles
by the timely death of well-placed family members.

These dynastic goals resonated with neo-classical ends that rose to prominence with
the revival of Greco-Roman culture that began in 15th century Italy. Humanists scholars
resurrected the heroic images of Rome and with them, the idea of a man as *vir virtutis*,
the ‘manly man’ who desired glory and honor above all else.31 In the amalgam of these
two sub-discourses honor and blood were linked in a discourse that pushed elites to
pursue the glory of their dynastic households.

27 Luard 1986, 25.
28 Sharma 2005, 15.
29 Anderson 1998; Luard 1986.
30 Anderson 1998, 89.
Sir Francis Bacon (1561-1626) emerged as the first public advocate of the central idea that knowledge can be used to control the world. Bacon argued against natural philosophy and natural history’s medieval habit of accepting the authority of reports without proof. This ethos inspired the classifiers, quantifiers, and systematizers that dominated 17th century thinking in Europe. A consequence of this Baconian empirical turn in natural history and natural philosophy was a massive increase in the documentation of bare facts. Tyco Brahe famously charted and documented the movement of the planets. Vesalius and Harvey dissected and classified the human body, founding modern medicine. Natural historians classified and catalogued species of fauna and flora. Political economists gathered data on Europe’s urban populations. This empiricist movement was not necessarily trying to explain the world, but strove to collect as many facts as possible because these facts would form the foundation of true knowledge. Thus, in the 17th century, data accumulated at vast rates.

The accumulation and study of facts resonated with the dominant traditions in natural philosophy, mechanism and the corpuscular philosophy. Both traditions sought to explain rather than just catalogue nature. The corpuscular philosophy offered an atomistic, reductive, materialist view of how the world worked. Corpuscles were posited to be the basic units of matter of which the rest of the world were made. These corpuscles were bound together by a variety of substances and collided with one another to create causation. The corpuscular philosophy had a profound change on the discourse of sci-

---

ence, establishing the idea that the world is made up of discrete elements that obey natural laws.

A corollary of the corpuscular philosophy was the mechanical worldview that emerged in the latter half of the 17th century. Both Newton and Leibniz were called ‘systematizers’ by their Enlightenment critics, which meant they saw the whole of the universe as operating as a giant clock, as a set of interlocking and determined causes. This contributes to the emergence of high modernism: overconfidence in the ability of knowledge to help us control the world. The mechanized worldview tells us that everything has an isolable and identifiable cause. As a result, political actors may try to do things that are impossible or destructive, instead of approaching political practice with appropriate humility.

This materialist, mechanical view of the world posed a direct challenge to the religious and dynastic discourses that supported the ends of saving souls and glory. The mechanistic and corpuscular worldview undermined the mythic, organicist ontology that supported aristocratic and religious discourses. By displacing their epistemic and ontological foundations, scientific discourse eroded the power of religion and dynasticism to constitute ends and goals.

Scientific Discourse in International Society, 1550-1650

How and why did scientific discourse enter into international society? In this section, I document three channels, each of which provides explanations for the first stage of institutionalization in which scientific ideas enter politics.

First, scientific epistemes and ontologies entered governmental institutions via ra-
tionalist and technical reforms designed to improve the effectiveness or efficiency of the state. On the one hand, this observation concedes a point to the rationalist-functionalist explanation. Scientific ideas entered political discourse in part because they offered an effective form of organization and means of destruction. Take, for example, the case of military innovation. Maurice of Nassau, during the Low Countries’ rebellion against the Spanish Empire, developed a new method for organizing and training his troops that drastically increased their rate of fire and therefore their effectiveness.

Figure 3.1. Close Order Marching in the Eighteenth Century

This innovation was combined with new “close order marching” that arranged the soldiers into geometric formations. The system is often identified as the first step in the

rationalization of the modern military; henceforth, until the 20th century the most successful military units standardized soldiers’ movements.35 As McNeill puts it, these innovations transformed the army into a coherent system: “Every movement attained a new level of exactitude and speed. The individual movements of soldiers when firing and marching as well as the movements of battalions across the battlefield could be controlled and predicted as never before.”36 The effectiveness of rational military methods, however, cannot explain why these innovations contributed to discursive and value change in the early modern state. My generative structure of discourse, however, explains how technical change translates into value change.

These innovations military relied on scientific epistemes and ontologies as they placed soldiers in clean geometric lines and ordered and arranged their movements. They thus provided a channel for these epistemes and ontologies to spread throughout military and political institutions. Other state projects contributed to the dissemination of CSD. For example, Jean-Baptiste Colbert, Minister to Louis XIV, undertook many engineering schemes, both for fortification and public works, which introduced scientific epistemes and ontologies into government.37 Early modern states sought to improve the way they built ships, forts and canals to remain militarily and economically competitive in a Europe wrought by scarcity and war.38 These technical changes imported scientific epistemes and ontologies which then supported calculable, ordered conceptions of goals that fit into the mechanistic worldview. The spread of these ideas constituted and naturalized the interest discourse and contributed to goal change in the early modern state.

37 Guerlac 1986; Mahoney 2010.
A second channel for scientific discourse is less functional to the needs of the state. Actors like Francis Bacon and William Temple acted as channels from which scientific discourse entered into politics. These polymaths, who dabbled in both science and politics, acted as gatekeepers or “boundary objects” that connected natural philosophy to political thought by using natural metaphors and concepts to make sense of politics.\(^{39}\) This process was often conscious. Hobbes, for example, explicitly deploys mechanist ideas as the foundation of his political theory. But the process could also be unconscious, as styles of thinking were borrowed without references to science per se. To the extent that these ideas were used to train political actors and design policy, they also changed the episteme and ontology of politics. In this chapter, I provide an analysis of scientific ideas in Hobbes, Pascal, Temple, and others who either worked directly as royal advisers or were important members of the aristocratic ruling elite.

Third, governments incorporated scientific ideas into politics for symbolic and ideological purposes. Science funding was increased as a source of legitimacy and prestige for the state over the course of the 17th and 18th century in part because monarchs could no longer rely on the theory of divine sovereignty.\(^{40}\) The use of scientific methods was justified and rationalized by academics and philosophers who explained the role and importance of scientific problem-solving methods. At first, these scientific discourses explained and justified the absolutist power of a mercantilist state that wanted to “demonstrate its wisdom and strength.”\(^{41}\) This is evident in official state propaganda such as a portrait of Louis XIV and the French Academy of Sciences.

\(^{39}\) A boundary object acts as a bridge between two communities of practice. Here, Bacon and Temple bridge natural philosophy and political thought, moving concepts and ideas back and forth.
\(^{40}\) Wuthnow 1979, 223-225.
\(^{41}\) Wuthnow 1979, 224.
Lebow points out that this is part of a broader shift in the legitimation of the state. The development of the state as an object independent of the ruler and her family meant that it could no longer be treated as the “personal property” of the ruler.

![Figure 3.2. “Colbert Presenting the Members of the Royal Academy of Sciences to Louis XIV in 1667” By Henri Testelin](image)

In France, this necessitated a shift from early depictions and legitimations of Louis as Apollo, the Sun, and King Solomon, to modern representations and ideologies:

[T]he symbolism invoked by Louis XIV and his advisors become more self-consciously rational, with the King portrayed as the indispensable cog in the machine or the source of energy and direction.

---

42 Lebow 2008, 301-02  
43 Lebow 2008, 301.  
44 Lebow 2008, 302.
Some have argued that these scientific developments can be explained on utilitarian grounds: that is, French leaders funded science because they thought it would benefit the interests of state. Some leaders did certainly believe that scientific knowledge would help them rule more effectively, and so it is an important factor. However, it cannot fully explain the use of science. As scholars point out, most of the early scientific projects were unsuccessful and did not yield useful applications.\textsuperscript{45} Thus, the utilitarian explanation “makes sense only to a limited degree in the face of the relative lack of practical contributions made by scientists; and it does not square with the actual memberships of the scientific academies.”\textsuperscript{46} Most of the time leaders imported scientific concepts unintentionally, but nonetheless, they were motivated to solve problems. So the belief that these methods would be effective was important. But it was not the only reason states came to depend on and internalize scientific concepts.

In short, early modern states incorporated scientific ideas to improve their capabilities, to serve ideological purposes, and because some individuals thought that scientific ideas would help to solve problems. But changes in means are not changes in ends. How did the import of these ideas change values and goals?

III. THE RISE OF MECHANISM AND STATE INTERESTS, 1600-1700

Two things are quite striking in the above narrative. First, before 1600 it was rare for political actors to speak of interests at all, let alone refer to and be guided by ‘interests of state.’ Values were embedded in a thick, holist, Renaissance discourse. In 1700, political

\textsuperscript{45} Wuthnow 1979, 223; Park and Daston 2006.
\textsuperscript{46} Wuthnow 1979, 223.
goals were dominated by talk of ‘interests’ and the ‘balance’. Second, after 1700, interests dominate the political discourse surrounding ends. The ends of politics became more abstract, calculable, and controllable. What happened in the 17th century to bring about this transformation?

My argument is that a necessary condition and central driver of this transformation was the infiltration of scientific concepts and ways of thinking into political discourse. It is no coincidence that the 17th century was the time in which Bacon, Galileo, Descartes, and Newton transformed natural philosophy and the conduct of inquiry. Many of the ideas they promoted are easily taken for granted today, but they were truly revolutionary at the time. The new discourse that emerged included the following elements:

*Rationalist Episteme:*

i) the world can be explained with and subject to control by the laws of nature;
ii) experience and empirical knowledge are the best guides of action.

*Ordered Ontology:*

i) the emergence of an atomistic, materialist, substance-based worldview;
ii) the calculability of means and ends;
iii) the development of the ‘systems view’ and the ideals of order and control.

The rationalist episteme and ordered ontology supported the notion of interests and the balance of power which depended on a number of discursive preconditions. First, knowing and calculating one’s interests depends on the epistemic notion that interests can be discovered and measured in the light of reason. It also requires belief in the power of knowledge to control the world via policy. Second, there must be an ontologically autonomous and coherent entity that can possess interests. This was made possible by the emerging atomistic ontology of scientific discourse. Third, whereas honor and glory were qualitative, difficult to measure ends, interests were conceived as knowable, calcu-
lable and measurable. Therefore, interest discourse rested on a materialist and quantitative ontology. Finally, state interests must fit into an overall system of interests. The systems view provides a source of order into which interests can fit. A system in which to classify states and the features of these polities relevant to geopolitics is necessary to support the whole discourse of the balance of power. Each of these ideas, which as we shall see are present in early modern political discourse, was promoted by early modern ‘scientific’ thinkers.

Is there evidence that these features moved into political discourse and changed the value system of the European international system? Below, I show how the discursive underpinnings of religious and dynastic ends were eroded by the scientific worldview outlined above. I document two central changes: First, from an episteme that privileges authority and casuistry to one rooted in experience and experiment. Second, from an organicist, mythical ontology to a materialist, law governed view of nature and society.

Changes in Episteme and Ontology, 1600-1700

Beginning in the latter half of the 16th century, the Renaissance discourse on means and ends was slowly eroded. Classical scientific discourse offered a rival episteme and ontology. The new cosmology represented nature as a set of isolable, reductive units that obey predictable laws which could be studied and understood. This undermined the idea that God is in control of nature and all that happens in history and politics. But it also weakened the organicist, mythical foundations of aristocratic discourses by suggest-

ing that blood and the land are not united in the glory of the aristocracy, but rather that they are mere substances, without mythical or world ordering powers. Instead, the power of rulers was to be rooted in the substances of territory and population.48

The first step in the transformation is an epistemic challenge to religion. Competitors to the view of the Bible as the authoritative source of political knowledge increase after Machiavelli. Specifically, the idea that secular reason is a guide to political action was incipient in the 1560s. The Dutch scholar Francis Junius says that “experience” is “the perfect counsellor.”49 Junius’ tract is also a wonderful example of modern argumentation in which reasons are followed by evidence from ‘experience.’ But this exists alongside medieval appeals to authority such as the States of Holland’s defense of the “laws and ancient traditions” laid down by prudent ancestors.50 It also sits alongside scriptural claims that “everyone must examine the scripture personally.”51

The growing power of secular reason helped people challenge the idea that God intervened regularly in everyday life. For example, Edward Haies, an English explorer, spoke of the importance of retaining God’s good will and to avoid “base purposes…which doth excite God’s heavy judgment.” God “will assist” those with which “He is well pleased.”52 But, an Italian diplomat observes that in Turkey, as early as 1592, people are already challenging the view that God controls everything that happens in life: “The belief that one’s death is written and that no one has free will to escape dangers is declining in Turkey with each passing day. Experience teaches them the opposite

48 Foucault 1977-78; Mirowski 1989.
49 Junius, 1974 [1566], 58.
50 States of Holland 1974 [1574], 119.
51 States General Defender 1974 [1579], 187.
52 Haies 1910 [1583], 267, 265.
when they see that a man who avoids plague victims saves his life.”

This leads to the Baconian belief that empirical knowledge should be the guide for action, not religious or ancient authority. The only true knowledge is that from experiment and geometric deduction. In this worldview, decisions are to be made by calculating costs and benefits.

Pascal provides the first example of a thoroughly scientific mode of decision-making in his famous wager. Whereas in the 16th century religious belief is an article of simple faith, in the 17th century Blaise Pascal is able to speak about religious choice, indeed all decision-making in terms of a wager. In doing so, Pascal offers the first known example of decision theory. Decision theory tells an actor what to do under conditions of risk. Pascal’s wager was an early demonstration of how mathematics can help make decisions in situations that were heretofore considered the ‘art of conjecture.’ He offered a scientific approach to decision-making. This should not surprise us, because Pascal published in the emerging science of logic and probability. The influential 1662 Logic of Port-Royal laid out ‘[t]he scientific method reduced to eight main rules,’ borrowed heavily from Pascal’s rules for definitions and axioms. Pascal’s wager includes three distinct arguments for choosing a pious life regardless of your belief in God.

First, without invoking probability, Pascal argues it is better to believe because the expected utility of the pious life is better no matter in both possible worlds. Since a pi-

---

53 Bernardo 1970 (1592), 166.
54 Pascal 1966 (1670), 149-153. By Lafuma’s numeration, §418.
55 Hacking 1975, 63-72.
56 de Jong and Betti 2010, 187.
57 From here on out, I follow Hacking’s (1975) exegesis.
58 Pious life weakly dominates:

<table>
<thead>
<tr>
<th>A’s Payoffs</th>
<th>Pious Life</th>
<th>Impious Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>God Exists</td>
<td>+1000</td>
<td>-1000</td>
</tr>
<tr>
<td>God Doesn’t Exist</td>
<td>+100</td>
<td>+100</td>
</tr>
</tbody>
</table>
ous life has its charms, even if God does not exist, choosing it leaves you as well off as if you had chosen a libertine life. But, if God does exist, choosing an impious life guarantees damnation. Thus, in game theoretic terms, the pious life strategy weakly dominates.

Second, Pascal tries to meet the objection that the pious life, in fact, does not have its charms and meet the libertine on her own terms. Since the pious life has a lower utility, the libertine will not agree that acting as if God exists dominates all other strategies.

Here, he argues that even if the pious life does not weakly dominate, given 50:50 odds on the existence of God, the expected payoff of the pious life is higher than the impious life.\(^59\) He then encourages the libertine by arguing that acting as if God exists for long enough will yield genuine belief in God. In the final argument, Pascal argues that the payoffs from salvation are infinite, so even if the probability of God existing is very low, the expected utility of the pious life will always exceed the finite goods of the libertine life.\(^60\)

This is an important event in the history of politics. Within a few years Pascal’s work on probability was incorporated into political economy and statistical thinking. Over the next two hundred years, this style of decision-making has become widespread with

\(^{59}\) The Libertine chooses to believe if the probability of God’s existence is high enough:

<table>
<thead>
<tr>
<th></th>
<th>Pious Life</th>
<th>Libertine Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>God Exists</td>
<td>EU=.50*+1000=500</td>
<td>EU=.50*1000=-500</td>
</tr>
<tr>
<td>God Doesn’t Exist</td>
<td>EU=.50*100=50</td>
<td>EU=.50*1000=500</td>
</tr>
<tr>
<td>Total EU</td>
<td>+550</td>
<td>0</td>
</tr>
</tbody>
</table>

\(^{60}\) The introduction of infinite payoffs ensures the Pious Life dominates again:

<table>
<thead>
<tr>
<th></th>
<th>Pious Life</th>
<th>Libertine Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>God Exists</td>
<td>EU=.01*+∞=∞</td>
<td>EU=.01*-∞=-∞</td>
</tr>
<tr>
<td>God Doesn’t Exist</td>
<td>EU=.99*100=99</td>
<td>EU=.99*1000=990</td>
</tr>
<tr>
<td>Total EU</td>
<td>∞</td>
<td>-∞</td>
</tr>
</tbody>
</table>
many political leaders seeking advice from mathematically inclined counselors.⁶¹

The second step in the transformation of political discourse is a new way of representing reality: in terms of a naturalist, materialist, atomist ontology first developed in natural philosophy. This alternative way of representing political and social reality emerges between 1630 and 1670. For example, in political economy, scientific metaphors changed the whole way scholars looked at money in society and politics. At the core of the change was the introduction of atomistic, naturalist systems. As of 1650, the mercantilist political economists had no conception of ‘an economy’ that is separate from society or the King. Thomas Mun, writing in 1630, refers only to “revenue” or “stock” or “Treasure.”⁶² All of these are just possessions of the Kingdom or the King. There is a tacit understanding of how supply and demand works, but this is not really explicit in part because Mun does not have the terms to describe it as such. He has no conception of the economy as being separate from the King’s money, and therefore cannot understand system dynamics.

The Austrian mercantilist Hornick, however, takes as his unit of analysis the “Landes-Oeconomie” or “national economy.” He conceptualizes the nation as a body in which money “circulates,” “[I]ke the human blood by the power of the heart passed every year to a large extent through the prince’s treasury.”⁶³ Economic activity was a system based on the new scientific understanding of the body, introduced by Harvey in 1628. In his work on the human body, Harvey found that the blood circulated throughout the body. While these seems obvious to us, it was a revelation at the time. It revolu-

⁶² Mun 1932 [1630], 190-93.
⁶³ Hornick 1932 [1684], 230.
tionized the way systems were thought of and caused a shift in the use of the metaphor of the body in political thought. Before, it was rooted in the idea of the humors and ancient medicine; henceforth, the body was to be understood as an increasingly complex system.

It is no coincidence that Hornick, who talks about the trinity of science (natural law, reason, and experience), is the first to talk of the national body as an isolable, general object. That the shift matters is obvious from the way Hornick shifts the discourse around economic problem solving. Whereas Mun and earlier mercantilists offer policies to correct imbalances, Hornick offers the first view of managing a system as a whole. He conceives of Austria’s problems as an “illness” that is beyond “weak and slow treatment” but instead needs radical overhaul. Hornick’s nine rules for improving Austria’s power are interesting because he talks about how different aspects of the rules interact and therefore has a tacit understanding of the interactive effects of a system. This more complex analysis, I want to suggest, is the result of a more complex metaphor underlying his understanding of the social world that was rooted in the discoveries of medicine.

The political upshot of these developments is a reconceptualization of the way economic health was conceived. Now, instead of accumulation of wealth, the primary indicator of health is the circulation of capital. This is the first move away from the static world of the mercantilists to the dynamic world of modern economics. In other words, Hornick’s representation permits the idea that the problem can be solved by intervention. His text is then a micro example of “means-ends change.”

---

64 Hornick 1932 [1684], 232.
While Pascal applied mathematical thinking to decision-making for the first time, Hobbes is the first to apply a specifically scientific method to an atomistic, naturalist understanding politics. As we saw in the previous chapter, Hobbes was a great admirer of geometry, and aimed to build *Leviathan* on that model.\(^{66}\) Hobbes is explicit that he is following a deductive model, and not an empiricist one. His model of science has two steps. First, there is the problem of proper naming or laying down the axioms. Second, the consequences must be deduced from these axioms.\(^{67}\) He starts with “reason,” which is defined in mathematical terms as “reckoning (that is, adding and subtracting) of the consequences of general names agreed upon for the marking and signifying of our thoughts.”\(^{68}\) But reason is not “born with us.” Instead it must be built on labels and orderly methods:

> [Reason is] attained by industry, first in apt imposing of names, and secondly by getting a good and orderly method in proceeding from the elements, which are names, to assertions made by connexion of one of them to another, and so to syllogisms, which are connexions of one assertion to another, till we come to a knowledge of all the consequences of names appertaining to the subject in hand; and that is it men call SCIENCE.\(^{69}\)

The “orderly method” is based on axiomatic geometry in which “there can be no certainty of the last conclusion without a certainty of all those affirmations and negations on which it was grounded and inferred.”\(^{70}\) Certainty can only be achieved by deducing from good axioms.\(^{71}\) The key idea here is that the scientific method can provide certainty in political life. Surely, this must have had extra appeal to Hobbes, who lived through

\(^{66}\) Shapin and Schaffer 1985.

\(^{67}\) See Shapin and Schaffer 1985, 87 for the importance of this in his natural philosophy.

\(^{68}\) Hobbes 1994 [1668], p. 23, §V.2.

\(^{69}\) Hobbes 1994 [1668], p. 25, §V.17.


\(^{71}\) Both this and Hobbes’ nominalism are strikingly similar to Riker (1990, 168) and other advocates of the nomological-deductive methods.
the upheavals of the English Civil War.\textsuperscript{72}

Hobbes also subscribed to a materialist view of the world inspired by natural philosophy. Hobbes also dabbled in corpusclarism and the mechanical philosophy. In addition, Hobbes was inspired by Harvey’s work on the circulation of the blood. It was his encounters with Harvey that made him a devoted materialist. In the opening pages of \textit{Leviathan} Hobbes defines all aspects of man in materialist terms, including the operation of the senses and the ideas they leave in our minds. The senses, he argues, are caused “by the pressure, that is, by the motion, of external things upon our eyes, ears and other organs thereunto ordained.”\textsuperscript{73} The images they leave in our mind are “impressions,” nothing but “decaying sense.”\textsuperscript{74} Hobbes then describes humans as machines made by nature. This was scandalous at the time, because, of course, God was the creator.

It is on this materialist, scientific foundation that Hobbes builds his famous argument that the vulnerability of people in the state of nature drives them to create a sovereign which will “keep them all in awe.”\textsuperscript{75} The argument is well known, but the epistemic aspects of it have been downplayed. Shapin and Schaffer point out though, that epistemic disagreement is one of the central causes of the war of all against all in the state of nature.\textsuperscript{76} Hobbes argues that the differences between people “ariseth partly from the diversity of passions in divers men, and partly from the difference of the knowledge or opin-

\textsuperscript{72} Shapin and Schaffer 1985, 103.
\textsuperscript{74} Hobbes 1994 [1668], p. 8, §II.2-4
\textsuperscript{75} Hobbes 1994 [1668], p. 76, §XIII.8.
\textsuperscript{76} Shapin and Schaffer 1985, 103-107.
ion each one has of the causes which produce the effect desired.”77 So the conflicts that arise in the state of nature are due in part to differences of opinion and the overestimation of one’s own “wit” which in turn contribute to distrust and war.78

Hobbes argued that politics could be better understood with science and Pascal showed how scientific reasoning could improve ‘rational’ decision-making. But it was the political economists William Petty (1623-1687) and William Temple (1628-1699) that combined these two and argued that scientific methods could be applied to problems of government. Temple thought of the government as a machine and his job was to discover the “the motions of it, from the first and smallest wheels.”79 He tried to explain features of polities by reference to the ‘natural constitution’ of nations. Though the “nature of man” was “the same in all times and places” it is varied by “the force and influence of the several climates where they are born and bred; which produce in them, by a different mixture of the humours, and operation of the air.”80

Petty was trained in medicine, was a founding member of the English Royal Society, and studied with Hobbes on the continent. He was a firm believer in the ‘new science’ of experimental philosophy. He cited Bacon directly and had an explicitly mathematical view of proper scientific method.81 Although it was only later in life that he developed scientific methods for the social sciences, he was to have an enormous impact on the field of political economy. He designed his social scientific method to be an ‘instrument

77 Hobbes 1994 [1668], p. 57-8, §XI.1
79 Temple 1690, 38.
80 Temple 1690, 1.
81 Desmedt 2005, 79.
of government.’

This is notably different from Hobbes’ use of geometry and the corpuscular philosophy. Hobbes used scientific methods to make normative claims about the origins and rights of government. Here, Petty explicitly intended to intervene in political life with scientific methods. This is the entry point for methods developed in the natural and mathematical sciences into political practice. However, McCormick argues, Petty’s project failed: “[His] proposals and petitions did not lead to his appointment to any significant office, and although political arithmetic did eventually achieve success as a way of talking about certain problems of government, it never became the instrument of government that Petty wanted it to be.”

But nonetheless Hobbes, Petty, and Temple redescribed politics in scientific, naturalist terms, and thereby contributed to the ongoing scientific constitution of political discourses. They promoted materialist, empiricist developments that undermined the goals of saving souls and pursuing glory in the public sphere. With this happening in the periphery, it is no surprise that core political discourse was also undergoing profound changes. Why did interests and the balance of power replace them?

The Rise of Interests and the Balance of Power, 1630-1750

After 1650 there is a marked shift in political discourse. God and glory still matter, but they begin to appear less often, and the language of “interests” emerges. My argument is that the calculation of interests and the idea of the balance of power depends on a rationalist and ordered cosmology that posits a systematic and ordered universe, ame-

82 McCormick 2009, Ch. 6 et passim.
83 McCormick 2009, 276.
84 Force 2003.
able to human control.

It is no surprise that scientific cosmologies and the idea of interests emerge together in core political discourse. It is the French Minister Cardinal Richelieu who first unites the power of secular reason and the necessity of state interests. Richelieu argues that the greater and more important a man is, the more he should use a rational process to make decisions since reason is a “competent and faithful council.” Thus, sovereigns should “make reason sovereign.” This is bound up with what it means to be a man: “It is necessary to have the masculine virtue of making decisions rationally, rather than to slide down the easy slope of inclination.” A prince is rational when he knows how “find the right instant to attain his ends.” That said, Richelieu still sees reason as God’s endowment to man: “common sense leads each one of us to understand that man, having been endowed with reason, should do nothing except that which is reasonable, since otherwise, he would be acting contrary to his nature and by consequence, contrary to Him.”

It should be no surprise that these changes in means discourses are also accompanied by changes in ends discourses. Richelieu famously argues that the “interests of the state” are primary. He also demonstrates a modern concern with instrumental rationality: “The essence of political prudence consists in seizing the most advantageous opportunity to implement one’s policy.” But what were “state interests” for Richelieu? Was it simply power maximization? Richelieu does argue that power makes “masters fully and

85 Richelieu 1961 [1635], 95.
86 Richelieu 1961 [1635], 71.
87 Richelieu 1961 [1635], 72.
89 Richelieu 1961 [1635], 71.
90 Richelieu 1961 [1635], 35.
91 Richelieu 1988 [1625], 5.
universally respected” but has a complex view of what power consists in. He lists four elements: a good reputation (which allows a ruler to “accomplish more with his name alone than a less well esteemed ruler can with great armies.”); soldiers kept continuously under arms; money in the treasury; and possession of the hearts of subjects since “gold and silver are almost useless without it.” But Richelieu also counsels the statesman to seek glory above all else. In the passage on prudence above, Richelieu counseled Louis to curb the Huguenot rebellion and restore domestic unity so that he could pursue “glorious action abroad.”

After Richelieu, the scientific infiltration of French government discourse is more complex. Louis recognized much that Richelieu taught him, but fundamentally, he was a dynastic, aristocratic ruler, grounded in the quest for honor and glory. Richelieu had a judicious sense of the need to calibrate means and ends, which while present in Louis XIV’s thought, was hard to find in his reign. Louis recognizes that means and ends must be calibrated. He states that “a capable Prince should know how to utilise everything to arrive at his ends.” He suggests that ruling consists in “allowing good sense to act” but this comes “naturally” to those “born” to be king. But Louis XIV does not explicitly emphasize the use of reason. Rather, he tells his heirs to keep informed of everything, to learn everything and be curious.

Louis XIV’s own views are also complicated but help to clarify matters. Historians have often noted that that Louis XIV was above all motivated by the quest for glory and

---

92 Richelieu 1961 [1635], 118.
93 Richelieu 1961 [1635], 119.
94 Richelieu 1961 [1635], 124.
95 Richelieu 1988 [1625], 5.
96 Louis XIV 1924 [1666-1679], 160.
97 Louis XIV 1924 [1666-1679], 49.
honor.\textsuperscript{98} If glory is defined in Lebow’s terms, as “standing” or approbation from peers, then there is historical evidence for this.\textsuperscript{99} Saint-Simon, the most famous of Louis’ biographers, argues that “vanity, this unmeasured and unreasonable love of admiration, was his ruin.”\textsuperscript{100} Colbert counseled his master to pursue glory and reputation.\textsuperscript{101} In his own testament, Louis XIV argues that glory is the highest goal and that the means to this is primarily reputation. But “reputation cannot be sustained without everyday acquiring a greater [one] … glory is a mistress whom one is never able to neglect.”\textsuperscript{102} So, continual conquest was a means to the end of glory. He also argues that “fine souls” never consider money “as the object of their desire, but only as a necessary means to the execution of their designs.”\textsuperscript{103}

Louis, like Richelieu, has regard for interests; but for him, interests are equated with glory. He cautions his would-be heirs not to pursue personal glory for its own sake (exactly what Saint-Simon charged) because personal glory is derived from the state, so one should always act in the “interests of the greatness, the welfare, and the power of the state.”\textsuperscript{104} So what it means to act in the name of glory is to act in the state’s interests, which in the end serves the ruler’s true personal interests. This is consistent with the overall dynastic worldview of states during this period, in which the glory of the ruler and his house underlies the interests of the polity.\textsuperscript{105} Whatever Louis’ views, French ministers talk increasingly of both honor and interests. Torcy, for example, argues that ac-

\begin{flushright}
\textsuperscript{100} Saint-Simon 1972 [1661], 20. Historian Blanning (2007, 541ff.) more or less agrees with this assessment.
\textsuperscript{101} Colbert 1977 [1665], 132-33.
\textsuperscript{102} Louis XIV 1924 [1666-1679], 59.
\textsuperscript{103} Louis XIV 1924 [1666-1679], 133.
\textsuperscript{104} Louis XIV 1924 [1666-1679], 169.
\textsuperscript{105} See Blanning 2007, 541, 547.
\end{flushright}
cepting the division of the Spanish Succession would have been “inconsistent both with the honour and with the interest of France” because it denied the rights of the successors.\textsuperscript{106}

His minister Colbert did more to rationalize and scientize government than any other political actor. Colbert extended the ‘intendant’ system and sent representatives of the King to every province of the country. These intendants were to provide the central government with all types of information about the populace and territory. They were to send maps with the number of houses and abbeys enumerated, revenues, personal information on local officers and magistrates, and details of the alliances between noble houses.\textsuperscript{107} He strove for order, by demanding “clarity, exactitude, personal inspection, accounting techniques [etc.]” from his officers. He demanded that his representatives establish “strict and unambiguous rules” and sought to codify them in a “single corpus of ordinances.”\textsuperscript{108} He incorporated “the machinery of statistical and social survey as a necessary part of his government.”\textsuperscript{109} Still, Colbert was not a “theorist” and did not explicitly talk about why he instituted these reforms, except to say that they served Louis and raised revenues.\textsuperscript{110} Thus, though he may not have intended to do so, Colbert enacted the reductive and ordered ontology of scientific discourse and put European states on the path to gathering statistical data on every aspect of society.

His example also contributed to the rationalization of other states. In his memoirs, Bolingbroke recognizes that Colbert was instrumental to the power of France “because it

\begin{align*}
\text{\textsuperscript{106}} \text{Torcy 1747, Vol. I, 33.} \\
\text{\textsuperscript{107}} \text{King 1972, 128-146; Soll 2009.} \\
\text{\textsuperscript{108}} \text{Colbert 1977 [1665], 69, 133.} \\
\text{\textsuperscript{109}} \text{King 1972, 146.} \\
\text{\textsuperscript{110}} \text{King 1972, 194.}
\end{align*}
was he who improved the wealth, and consequently the power of France extremely, by the order he put in finances, and by the encouragement he gave to trade and manu-
factures.”¹¹¹ The tacit idea here is that the power of a nation is the product of policy, especially policy informed by the drive for rationalization and systematization. The introduction of this episteme opens up new possibilities for conceptualizing the conduct of government.

In 1722, Prussian King Frederick William I yearned for more knowledge to control politics. He demanded “that complete information should be rendered to Us periodical-
ly on everything that occurs in the country and the towns, and on the true situation, par-
ticularly when there is any deficit in the land tax or the town excise.”¹¹² This information must rest on “correct and truthful foundations and on mature precedent investigation of all and every attendant circumstance.”¹¹³ His son Frederick the Great is the first policy-
maker to argue that government should be a philosophy or science: “A well-conducted government must have a system as coherent as a system of philosophy; all measures taken must be based on sound reasoning, and finance, policy, and military must collabor-
ate toward one aim, the strengthening of the state and the increase of its power.”¹¹⁴ For him, Machiavelli was right: “Princes are bound to have ambition, but it must be prudent, measured, and illuminated by reason.”¹¹⁵ This seems obvious to us today, but at the time it was the first coherent statement of the ideal of the sciences of government. That said, “policy, being too much at the mercy of chance does not allow the human spirit to con-

¹¹¹ Bolingbroke 1932 [1735-36], 34.
¹¹² Frederick William 1970 [1722], 298-99.
¹¹³ Frederick William 1970 [1722], 298-99.
¹¹⁴ Frederick the Great 1970 [1752], 334.
¹¹⁵ Frederick the Great 1970 [1752], 340.
trol events unborn and all that falls within the field of future contingencies.” Still the yearning and the design are there. That this yearning appears in the figure of Frederick the Great is no surprise. Frederick was an enthusiast of the French enlightenment and invited Voltaire and his circle to Prussia to offer counsel and entertainment.

After Louis XIV, these changes in episteme and ontology would contribute to the inversion of the relationship between glory and interest. The concern for glory lingers on into the 18th century but unmistakably it is ‘interest’ that now comes first. English Foreign Minister Bolingbroke says that the “glory of a nation is to proportion to the ends she proposes, to her interest and her strength; the means she employs to the ends she proposes, and the vigor she exerts to both.” This discourse merges with a discourse centered on the balance after Louis XIV’s conquests inspired European monarchs to institutionalize the balance of power as a principle of common interest in the Treaty of Utrecht (1713). There the monarchs of Europe take turns paying homage to the goal of “[p]eace, and securing the Tranquillity of EUROPE by a Balance of Power,” or the “universal Good and Quiet of Europe, by an equal weight of Power.” Bolingbroke describes the rise of balance of power thinking:

The two great powers, that of France and that of Austria, being formed and a rivalship established by consequence between them; it began to be the interest of their neighbours to oppose the strongest and most enterprising of the two, and to be the ally and friend of the weakest. From hence arose the notion of a balance of power in Europe, on the equal poize of which the safety and tranquillity of all must depend.

French Foreign Minister Torcy claims that balancing against France was the “common

---

116 Frederick the Great 1970 [1752], 339.
117 Bolingbroke 1932 [1735-36], 95.
118 Treaty of Utrecht 1973 [1713], 184, 187.
119 Bolingbroke 1932 [1735-36], 17-18.
interest” of European princes. When Queen Anne set out to defend the peace to the English people she stated, “Nothing, however, has moved me from steadily pursuing, in the first place, the true interest of my own Kingdoms.” In this case, this was operationalized in terms of the balance of power, trading privileges, and territory. The 1720 Quadripartite Treaty was created “to ensure that the Balance of Power in Europe be maintained.” One British official justified the war of Spanish Succession because “it was the real interest of Great Britain… to prevent the House of Bourbon from growing too powerful, and the House of Austria from being reduced too low, that the Ballance of Power might be thereby preserved.” Writing in the 1740s Julius Alberoni constantly refers to the balance and interests as the ends of policy. Frederick the Great advises princes to “follow slavishly the line which one’s real interests dictate.”

IV. A TALE OF THREE BALANCES, 1600-1850

The rise of interests paved the way for the rise of balance-of-power thinking to dominate international politics. In constituting these discourses, scientific ideas provided the foundation not only for a new mode of power politics, shorn of dynastic constraints, but a new system of values, in which states saw their ends not in terms of glory, but in terms of material power. This value system was codified in balance-of-power norms which reached ascension in the 17th and 18th centuries.

As Alfred Vagts points out, the idea of the balance had been around since the Re-

---

121 Queen Anne 1904 [1712], 51.
122 Quadripartite Treaty 1973 [1720], 69.
123 Carteret 1744, 11.
124 Alberoni 1743, 65ff., 82-90.
125 Frederick the Great 1970 [1752], 339.
naissance, but it only now reached ascension. Why? Vagts provides an analytic framework and explanation. First he notes that political ideas often come from other disciplines, such as the natural sciences, religion and the arts, as if political ideas were “in need of outside authority and confirmation before they become acceptable and convincing in the strife of politics.” Second, he argues that the more circulation a term has, the more politically effective it will be:

The more widely a given term is used, even though with very different meaning and application, the greater its political usefulness. The confluence, largely metaphorical in its nature, helps (1) to formulate a term and (2) to justify and strengthen it, give it authority, put and keep it in circulation.

This, he concludes, explains efficacy of the balance of power concept:

This was strikingly true of the political balance of power, as image, phrase, and concept. Though the practice would seem to have preceded literary crystallization, by the time it was being formulated and accepted or discussed, in the Renaissance, there was already a broad popular acceptance of balancing in many another fields of thought and activity.

In this section I provide a similar ideational explanation, highlighting the role of scientific ideas.

Epistemic and ontological changes in the 17th century laid the groundwork not only for the rise of interests, but for the emergence of the balance of power idea. The rise of the balance, of course, was also supported by struggles for power in Europe, first between the Valois and Habsburg dynasties in the 15th century, then by the Bourbon and Habsburg dynasties in the 16th century, and by the adventurous wars of Louis XIV in the 17th century. But an explanation depending on these material facts must be comple-

---

126 Vagts 1948, 87.
127 Vagts 1948, 89.
128 Vagts 1948, 89.
mented by the ideational preconditions for understanding and calculating the balance.

Gulick and Kissinger have made this argument in other contexts. They suggest that the concept of the balance of power is rooted firmly in the scientific metaphysics of the age. The ideal of the balance fit in well with the emerging Newtonian worldview of the 17th and 18th century. Schweller, quoting Morgenthau, sums this up well: “[the] balance of power has been traditionally treated as a law of nature, wherein the whole universe is pictured “as a gigantic mechanism, a machine or a clockwork, created and kept in motion by the divine watchmaker.”” For Kissinger, the concept, ‘balance of power,’ while a naturally occurring phenomenon, eventually became an idea that was more effective because it was able to draw causal power from its resonance with the new science. CSD therefore shaped the goals of international politics.

These accounts of the relationship between the balance and scientific ideas are suggestive, but they oversimplify matters. There were actually three balances of power in European power politics between 1600 and 1850. First, there is the balance-as-counterpoise, rooted in metaphors of scientific measurement. In 17th century Europe a counterpoise was a “weight which balances another weight.” The key references from the history of the concept in the Oxford English Dictionary are from scientific texts. One example is drawn from Hobbes’ rival Robert Boyle, who used scales in his “physiomechnicall” experiments. On this view the balance of power meant “weighing” forces against one another. The rationalist episteme was constitutive of this balance idea because it depicted a world governed by natural laws that could be grasped and manipu-

131 Schweller 2004, 162.
132 OED, “counterpoise, n.”
lated by reason. The ordered, substance-based ontology (rooted in the bodily metaphors of Hornick and the materialist discourse of Hobbes) provided a way to conceive of power in terms of territory and population. These could be calculated (in terms of square kilometers or number of souls) and “balanced” literally, as on scales.

The second balance is the balance-as-system. Once Newtonian models of the universe spread, they supported the idea that the balance operated, as the planets did, in an orrery governed by natural laws. These ideas naturalized the balance of power idea, even when there was no “balance” in material terms. This balance dominated the 18th century, when the Enlightenment dominated European thought. The third balance is the balance-as-equilibrium. This conception drew on 19th century field metaphors in physics and chemistry and is articulated here by Prince Metternich. On this view, the balance was an agreement by the powers to maintain a stable international system by working through their problems together. Just as molecules come together in a field, monarchs would come together in the balance. The balance was thus reconceptualized as a collective institution.

Each new balance depended on subtle alterations in the underlying scientific episteme and ontology of European politics. As new scientific ideas entered politics, the balance of power was reconceived to fit them.

The Balance-as-Counterpoise in the 17th century

In the early 17th century, the clearest articulation of the balance of power logic appears in the writings of Francis Bacon. In a 1623 letter to James I advocating preventive war with Spain, Bacon argues that there are three requirements for making war: a just
cause, a “balance of forces,” and a set of “Designs...whereby the war shall be managed.”\footnote{Bacon 1874 [1623], 470, 460.} In what follows Bacon offers both a clear articulation of classic balance of power theory, and an analysis of relative power vis-à-vis Spain. However, he does not refer to balance of power theory as balancing; he refers to the analysis of relative power as “balancing the forces.”

In the first section, Bacon argues that “just fear” of a rising power” is “just cause of a preventive war.” First of all, it is interesting that Bacon does not cite or discuss the Scholastic, biblical tradition of just war theory.\footnote{The Scholastics were central intellectual enemies of Bacon. See Zagorin 1998, 26-30.} Instead, Bacon makes his arguments on purely secular grounds, citing Thucydides and historical precedent:

> It is so memorable... how that triumvirate of kings, Henry the eighth of England, Francis the first of France, and Charles the fifth, Emperor and king of Spain, were in their times so provident, as scarce a palm of ground could be gotten by either of the three, but that the other two would be sure to do their best to set the balance of Europe upright again. And the like diligence was used in the age before that league...which was contracted between Ferdinando King of Naples, Lorenzo of Medici Potentate of Florence, and Lodovico Sforza Duke of Milan, design chiefly against the growing power of the Venetians; but yet so, as the confederates had a perpetual eye upon another, than none of them should overtop.\footnote{Bacon 1874 [1623], 477.}

This is a clear articulation of classic balance of power theory rooted in historical experience. Bacon concludes, “as long as reason is reason, a just fear will be a just cause of a preventive war.”\footnote{Bacon 1874 [1623], 477.} In making this case, Bacon also refers to “reason of state.”\footnote{Bacon 1874 [1623], 477.} In this way, Bacon draws the first explicit links between the balance of power doctrine and the emerging doctrine of reason in world politics.

When he turns to “balance the forces” Bacon argues, “I am led to think that Spain is
no overmatch for England, but that which leadeth all men; that is, experience and reason.” Bacon uses experience and reason differently. Under “experience” he lists “particulars…in an historical truth,” namely, “proofs of the English valor and fortune,” territorial gains since the last war, and Spanish relations with potential allies (the French, Italians and the Dutch). Under “reason” he discusses “natural fortifications” and the “three main parts of military puissance, Men, Money, and Confederates.” In dividing the discussion this way, Bacon is making a distinction between historical events and facts (experience) and inferences from men and money to power. He argues that Spain is in no stronger a position than when they were defeated by the English in 1588.

This interesting and suggestive text shows two things. First, balance of power thinking is directly linked to the rise of reason and interests. In one of the first places we see “reason of state” and the abandonment of religious arguments, we see balance of power theory articulated clearly. Moreover, “Men” and “Money” are calculable bases of state interests. Since populations and treasuries were legible to ordered representations, they provided a quantitative basis for international understandings. However, Bacon did not yet use the term, “balance of power.” This reveals that as yet the underlying mechanistic metaphors were not in place, and indeed would not be until later in the 17th century. It would only be after Louis XIV and Newton taught Europeans about the necessity and logic of the balance that mechanism and balance of power thinking would combine into a powerful ideology to unite the European community.

Nonetheless, this text is before its time, in the sense that expressions of the balance

---

138 Bacon 1874 [1623], 482.
139 Bacon 1874 [1623], 484-95.
were few and far between in the early 17th century. The rise of the balance idea comes only with a variety of developments in the late 17th century: the consolidation of state power and thus the emergence of the sovereign state post-Westphalia; the common threat of Louis XIV to many European states; and, a scientific revolution which provided metaphorical resources and the promise of certainty and control in a time of crisis. Theodore Rabb has argued that Newtonian ideas spread so widely and so quickly in the 17th century because it was a time of “general crisis.” Religious divisions had destroyed old models of authority and the Thirty Years War had fostered pessimism and discord. In this context, Newton’s model of the universe offered a model of stability and order. Michael Sheehan adds that the balance of power, rooted in the rising mechanist worldview served these ends as well, offering a vision of harmony in a complex world of war and violence.

The 18th century provided even more fertile ground for balance of power thinking in Europe. The Enlightenment movement spread and popularized Newtonian thinking and scientific authority. Moreover, religious and nationalist barriers to alliance formation were weaker than they had been in the 16th and 17th century, or would be in the 19th century. A scientistic age allowed moderation in politics.

The Balance-as-System in the 18th century

The War of Spanish Succession proved to be the last of Louis XIV’s wars. What began as argument over how to divide the inheritance of the King of Spain ended with

---

140 Anderson 1993; Sheehan 1996.
142 Sheehan 1996, 44-47.
143 Sheehan 1996, 98.
most of Europe allied against the French. At the Utrecht conference in 1713 the great powers convened to establish a peace that would preserve the balance of power in Europe. Whereas the Peace of Westphalia emphasized religion, tradition, legality, and loyalty, Utrecht gave primacy to rationality, reciprocity, and the “interests” of monarchs. The master concept was now “rationality.”\textsuperscript{144} The treaty codified the idea of the balance as a core principle of international politics. Prior to 1713 the idea of the balance was primarily as a policy or rule on which monarchs should counteract any potentially dominant power. At Utrecht, it served “as a device for controlling and planning…the structure of the system as a whole.”\textsuperscript{145}

This was made possible by underlying changes in the episteme and ontology of international society. These changes enabled a whole new discourse of ends that encouraged states to calculate and rationally pursue their interests, operationalized in abstract and quantitative terms. For example, the balance of power principle rests on the idea that politics is subject to rational control. The balance of power also rests on a whole host of ontological concepts. Bolingbroke, the architect of the balance of power at Utrecht, uses the authority of nature to illuminate the operation of the balance. His conception recalls the balance-as-counterpoise metaphor, but points in the direction of the Newtonian balance: “the precise point at which the scales of power turn like that of the solstice in either tropic, is imperceptible to common observation.”\textsuperscript{146} Thus, on his view, one must look behind appearances to the true causes and consequences of the balance, much like a natural philosopher. Similarly, in his renunciation of the French throne in the Treaty of

\begin{footnotes}
\item[144] Osiander 1994, 103.
\item[145] Osiander 1994, 123.
\item[146] Bolingbroke 1932 [1735-36], 32.
\end{footnotes}
Utrecht, Philip V of Spain suggests that “right reason does persuade us” to accede to the “fundamental and perpetual Maxim of the Ballance of Power in Europe.” The word “maxim” is important in this context. It means “a self-evident proposition” and its etymological origin is in mathematical reasoning. The use of maxim and other scientific concepts naturalized the balance of power. Moreover, Philip V’s statement is no idle talk; it comes in a treaty that captures the intersubjective content of international politics in the early 18th century. Philip V’s friends and enemies thrust this statement of support for the “Maxim” of the balance upon him.

Discussions that link the balance of power and scientific concepts were more explicit and frequent in the 18th century, as the Enlightenment movement emerged and spread across Europe. M.S. Anderson’s survey of 18th century pamphlets reveals a variety of scientific metaphors in discussions of the balance. The balance is described as “a Maxim of true Policy” or as a “law.” This status of a law benefitted from scientific analogies with Newtonian laws:

What gravity or attraction, we are told, is to the system of the universe, that the ballance of power is to Europe: a thing we cannot just point out to ocular inspection, and see or handle; but which is as real in its existence, and as sensible in its effects, as the weight is in scales.

Just as Newton had laid out the principles of a rational system that explained the movement of bodies, balancing was held up as a “maxim in every rational system of politics.” Prince Kaunitz, Foreign Minister in Vienna, laid out a political algebra and be-

---

148 OED 2011 [2001].
152 F. von Gentz 1801, Quoted in Anderson 1993, 165. Von Gentz was a clerk for Metternich at Vienna.
lieved that the balance was an automatic mechanism.\textsuperscript{153}

At the turn of the nineteenth century, when the Congress of Vienna married balance of power ideas to the congress system in which the great powers would jointly manage international politics.\textsuperscript{154} Again, the most interesting characters are those like Bacon who crossed the boundaries of natural science and politics. Henry Brougham, for example, was a polymath with interests in natural philosophy and politics. In the 1790s, he intervened in scientific debates on optics, defending Newton’s particle-based views against the new wave theory of Thomas Young.\textsuperscript{155} But by 1803 Brougham was pursuing a political career and intervening in debates on foreign policy issues. He was elected to the House of Commons in 1810 and rose to the position of Lord Chancellor. In his early writings, he brought a distinctly scientific perspective to balance of power theory.

In an 1803 Essay Brougham sought to respond to those who dismissed the doctrine of the balance as mere ideology by legitimating the balance in scientific terms. Brougham compared the development of balance of power theory in the 18\textsuperscript{th} century to the process of discovery in which the “planetary motions” were “brought to light.”\textsuperscript{156} Just as the “law of gravitation” keeps “each body in its place, and preserves the arrangement of the whole system,” the balance of power:

[R]egulates the mutual actions of the European nations; subjects each to the influence of others, however remote; connects all together by a common principle; regulates the motions of the body; and confining within narrow limits whatever deviations may occur in any direction, maintains the order and stability of the vast complicated system. As the newly-discovered planets are found to obey the same law that keeps the rest in their orbits; so the powers, which frequently arise in the European world, immediately fall into their places, and conform to the

\textsuperscript{153} Anderson 1994, 167.
\textsuperscript{154} Osiander 1994, 232-36.
\textsuperscript{155} Cantor 1983, 78.
\textsuperscript{156} Brougham 1872 [1803], 11.
same principles that fix the positions and direct the movements of ancient states.

Brougham here explicitly articulated what I argue is the foundation of the balance in the 18th and 19th century: its resonance with the underlying mechanist metaphors of Newtonian natural philosophy. These concepts were surely familiar to the political elites of the 18th and 19th centuries. The aristocratic culture of the time was suffused with late Enlightenment thinking.\textsuperscript{157} Thus, 200 years after Bacon, the Newtonian view of the balance was finally naturalized.

**The Balance-as-Equilibrium, 1800-1850**

At the end of the 18th century the Newtonian vision of the balance was consolidated.

Sofka explains the central tenets of this view:

[T]he balance of power was an essentially Newtonian construct that assumed that the international system evolved through cycles of peace and war, much as a swinging pendulum moved between fixed poles without ceasing its motion, and was predicated on the idea that international politics operated according to quantifiable principles. By measuring and/or manipulating these variables, such as the size of armies, navies, or financial reserves, a state’s “power,” or capabilities could be calculated. “Parity” could be obtained by matching these standards and competing with each other for economic and strategic assets.\textsuperscript{158}

However, just as these Newtonian ideas had reached ascendancy, Prince Metternich, the principal Austrian negotiator at the Congress of Vienna, was to offer up an alternative vision of the international system rooted in a new set of chemical metaphors.

Metternich was given a classic Enlightenment education. His tutor, Friedrich Simon, was a deist who quoted Condorcet and d’Alembert and left Austria in 1792 to join the

\textsuperscript{157} Osiander 1994, 189.

\textsuperscript{158} Sofka 1998, 133.
revolution.\textsuperscript{159} This early education seemed to have a profound influence on Metternich who in later years aimed to become a doctor or chemist, and, as he records in his memoirs, “diligently attended lectures on Geology, Chemistry, and Physics.”\textsuperscript{160} Later, he “followed with attention the progress of Medical Science.” He remarks, “[m]y particular vocation seemed to me to be the cultivation of knowledge, especially of the exact and physical Sciences, which suited my taste particularly.”\textsuperscript{161} While he eventually pursued a law degree, Metternich maintained his interest in chemistry throughout his life, frequently referring to chemical metaphors in his letters and writings.\textsuperscript{162} He studied law under the rationalist Niklas Vogt where he had Kant’s “Idea for a Universal History” and endorsed its central tenets.\textsuperscript{163} His episteme and ontology was thus rooted in medical and chemical analogies and his ideology was shaped by Enlightenment rationalism.

His political thought bore the marks of this education. In one letter he made explicit comparisons between government and chemistry: “society and the advance of society are subject to fundamental laws just definitely as physical forces are subject to other laws.”\textsuperscript{164} He described his own reasoning as “calculations” that can distinguish between fundamental causes and “transient and variable symptoms.”\textsuperscript{165}

Later, in his memoirs, Prince Metternich reveals the “few principles to which I have always reduced the science commonly know by the name of Politics and Diplomacy.”\textsuperscript{166}

\textsuperscript{159} Sofka 1998, 117.
\textsuperscript{160} Metternich 1880-2 [1844] Vol. 1, 23.
\textsuperscript{161} Metternich 1880-2 [1844] Vol. 1, 23. Quoted in Sofka 1998, 117. The quote is from a letter to the Russian Foreign Minister. He leaves these details out of his memoirs, I suppose out of a desire to distance himself from the revolution which gave birth to Napoleon and the threats to conservative order.
\textsuperscript{162} Sofka 1998.
\textsuperscript{163} Sofka 1998, 119-122.
\textsuperscript{164} Quoted in Sofka 1998, 118-19.
\textsuperscript{166} Metternich 1880-2 [1844] Vol. 1, 36.
Metternich argues that “Politics is the science of the vital interests of states.” 167 Each state has both its private interests and “those which are common to it with other states.” Metternich then claims that it is the common interests which are the true interests of states: “The great axioms of political science proceed from the knowledge of the true political interests of all states. In these general interests lies the guarantee of their existence.” 168 Individual interests are “transitory” for states must base international relations on “the principle of the solidarity of nations and of the balance of power.” 169 Metternich then concludes his statement of principles by explicitly denouncing Richelieu, Mazarin, and Talleyrand: “Resolved not to walk in their steps, and despairing of opening a path in harmony with my own conscience, I naturally preferred not to throw myself into those great political affairs.” 170

These comments notwithstanding, Metternich eventually left his “scientific circle” and entered the diplomatic world. His work there also reveals the influence of rationalist discourse. He employs scientific concepts throughout his international writings. For example, in 1808 he describes the balance in overt scientific terms: “The Austrian monarchy, sapped in its foundations, only figured in the balance of power as an inert mass in opposition to France… deprived of a great quantity of material resources, she awaited a new creation.” 171

But Metternich’s connections between scientific thought and the balance of power

169 Metternich 1880-2 [1844] Vol. 1, 37. He continues: “The establishment of upon the basis of reciprocity, under the guarantee of respect for acquired rights, and the conscientious observance of plighted faith, constitutes, at the present day, the essence of politics, of which diplomacy is only the daily application.”
are much more interesting and deep than this. Writing 125 years after Newton, Metternich actually reveals the waning of Newtonian influence on balance of power thinking. In the Newtonian model, the balance is a natural law with its own logic and automatic enforcement. States, like planets, obey laws of gravitation. By contrast, in Metternich’s view the balance of power was more akin to an equilibrium in the chemical processes of the body. This reveals not only the personal proclivities of Metternich, who preferred the chemical and medical sciences, but the science of his time. In the late 18th century, Lavoisier and Cavendish had made crucial discoveries in to advance theories of chemistry. In the early 19th century, Dalton would initiate the rise of “atomic” chemical theory. In these analyses, fields of gases and particles would come together in equilibrium to form coherent systems.

In this milieu, it is perhaps no surprise that Metternich altered the dominant understanding of the balance of power as the great powers submitting to their common interests in the stability of the system. He advocated a non-violent international “equilibrium” in which all powers submitted to the laws and principles of international community.172 This view reflects Metternich’s Enlightenment rationalism and the scientific metaphors from the chemistry laboratory. While, they certainly resonate with scientific discourse, Sofka argues that these views actually demonstrate that Metternich broke with the Newtonian view of the balance. In contrast to a view of the balance as a self-regulating system, Metternich believed that the balance of power had to be regulated by the laws of nations and principles of reciprocity.173 Moreover, while Metternich recog-

nized the need for states to secure their self-interests, he argued that sometimes those interests had to be subordinated to the greater good of stability in the international system.174

This version of the balance-as-equilibrium promoted by Metternich conflicted with the old idea that dominated at Utrecht. Some great powers wanted to achieve a “balance of forces,” in terms of the distribution of territory (rooted in a substance ontology of power). The participants wanted to ensure a just distribution of “souls,” which they understood was the basis of the balance of power. To this end, they struck a “statistical committee” which would estimate population figures and help the great powers to settle territorial claims. This was the first “scientific” committee to which great powers delegated tasks. At first, Castlereagh, Metternich, and Talleyrand hoped that the commission would create a complex indicator of “value” that incorporated population figures, the quality of the land, and the wealth of inhabitants. However, Prussia would not allow this since it wanted compensation for its concessions in Poland (populated by poor peasants) at the full rate.175 The committee had dubious sources at hand and could not conduct field work, so its estimates were clearly problematic. In the end, the figures were mostly obtained by taking the average of the high and low estimates.176

Osiander argues that, “in terms of the distribution of territories and populations, the Vienna settlement fell far short of the theoretical goal of rough equality at least between the major actors.”177 While Prussia possessed just 10 million souls, its neighbor, the Habsburg Empire retained 25 million. Moreover, Prussian territory was indefensible be-

176 Zamoyski 2007, 387.
177 Osiander 1994, 229.
cause it was in two pieces. Nonetheless, the statistical committee demonstrates the underlying objective, reductive, quantitative, and substance-based discourse that formed the basis of balance of power thinking. In an organicist, dynastic world, governed by blood and ancient rights, such rationalist calculations of the balance would have been incredibly difficult if not impossible. But, more than likely, they were simply not thought about because they were irrelevant to the way medieval thinkers thought about politics.

The Importance of the Balance of Power Idea

Why does the idea of the balance of power matter? The final defeat of Louis XIV's ambitions in 1713 led to the codification of the principle of the balance of power in international law. Most scholars might simply see this as a codification of the principles that had governed the previous fifty years of European power politics. European leaders were desperately balancing to resist the hegemony of France. According to this view, the elevation of the idea to the level of principle is inconsequential. It is a case of ideas following facts, not vice versa. In this section I respond to this by arguing that the balance of power idea was not merely a reflection of existing practices. Importantly, actor beliefs and perceptions of the material reality, and how that reality should be acted upon, were shaped by ideas of the balance.

The Balance as Ideology

---

178 Indeed, Osiander argues that the 1815 treaty had therefore to rest not on the balance of power, but on the principle of great power management (1994, 230-36).
First, Paul Schroeder argues that the behavior of states in the years leading up to Utrecht should not be characterized as balancing.\textsuperscript{179} Schroeder shows that there was some balancing behavior, but it usually happened after hiding and bandwagoning failed. Often war went on simply because it had to, because the French would not stop. The neo-realist reply would be that “regardless of the particular motivations and policies of individual statesmen and units, the broad outcome was what neo-realist theory predicts: France’s hegemony was overthrown, and new great powers and a balance of power emerged.” But for Schroeder this was the generic result of “a general free-for-all scramble in international politics” and was not caused by structural constraints and balancing behavior.\textsuperscript{180}

Moreover, while it is clear that the Treaty of Utrecht was designed to enshrine the principle of the balance of power in law, its actual substance and effect was to cement British advantages. As Schroeder says, “The Peace of Utrecht was deliberately designed to gain Britain vital advantages overseas while freeing it from continental commitments and forcing others (especially Austria) to bear the burden of containing France in Europe.”\textsuperscript{181} Indeed, the provisions of the treaty deliver exclusive trading rights and key port cities to Britain, while ceding small pieces of territory to all the other powers. To the British, the ‘balance of power’ meant hegemony:

“For the English the phrase “balance of power,” when it was not a substitute for thought, regularly meant nothing more than the arrangement whereby France or any other power that might threaten or compete with Britain would be checked by the exertions of others at their own expense, allowing Britain to concentrate on trade and empire. The real definition of a ‘balance of power’ thus becomes a

\textsuperscript{179} Schroeder 1994.
\textsuperscript{180} Schroeder 1994, 140.
\textsuperscript{181} Schroeder 1994, 142.
system enabling Britain to enjoy hegemony and pass its costs to others.”¹⁸²

The British were able to inscribe their hegemony into the treaty in spite of the multiple and many references to the balance or equilibrium. Everyone fought to deter French hegemony, only to sign onto British hegemony. In this way, the concept of the balance of power operated as ideology: it hid the political content of the treaty in the name of the mutual interests of all concerned.¹⁸³

Schroeder argues that the Vienna Settlement of 1815 no more rested on the balance of power than the settlement of 1713. Again, he dismisses the idea that balancing practices stopped Napoleon. Instead, states tried to hide or bandwagon, but Napoleon’s relentless ambition pushed him on, and forced other states to fight. For Schroeder this is not balancing behavior, which is a strategy intended to stop a hegemon, but pure survival.¹⁸⁴ Moreover, at the end of the war, the Vienna settlement’s “essential power relations were hegemonic, not balanced, and a hegemonic distribution of power, along with other factors, made the system work.”¹⁸⁵ The system in 1815 was not multipolar but bipolar since Britain and Russia could essentially combine to impose their will on the remaining European powers whenever they felt like it. The treaties signed in Vienna only institutionalized these facts. After 1815, Russia and Britain could pursue their interests and “try to expand their influence in various spheres almost without regard to the ac-

¹⁸² Schroeder 1994, 142.
¹⁸³ Likewise, Osiander argues that in 1713 everyone was concerned with Habsburg power, but: “the increase in Habsburg power at no time threatened the stability of the system. This shows that the balance-of-power principle may operate as a vehicle of international consensus, and thereby as a safeguard for international stability, quite independently of the actual distribution of forces (in fact, this is almost invariably the case, since an even distribution of forces between the actors is virtually impossible to achieve. It is only necessary that the existing distribution of forces is not regarded as illegitimate).” (Osiander 1994, 128).
tions or reactions of the other powers.”

It is striking then that at the two moments when the idea of the balance is at its height, European reality does not reflect classical balance of power thinking. Just as scientific ideas worked to support state ideologies at the domestic level, scientific ideas supported the balance of power ideology at the international level. Ideas did not merely reflect material reality, but were used to legitimate imbalances of power. Powerful actors imposed a favorable view, regardless of the underlying material conditions. But this act of legitimation could not have succeeded without changes at the epistemic and ontological level that made the whole system of balancing sensible and natural.

But the balance of power was not simply ideology. Since it was rooted in the patterns of war and competition and necessitated the measurement of territory, population, and revenues, it encouraged a whole new way of looking at society. Colbert at first, and all ministers later, began to render their internal subjects and resources ‘legible’ or visible and understandable. This is in marked contrast to the premodern state which was in many crucial respects, partially blind; it knew precious little about its subjects, their wealth, their landholdings and yields, their location, their very identity. It lacked anything like a detailed “map” of its terrain and its people. It lacked, for the most part, measure, a metric, that would allow it to “translate” what it knew into a common standard necessary for a synoptic view.

After Colbert and the information revolution, the state can now know its subjects and its lands intimately, and it has the tools necessary to make rational decisions. The

186 Schroeder 1992, 689.
introduction of these means opens up new possibilities for conceptualizing the conduct of government as rational control. This facilitates the domination and control of subjects. Moreover, it ends up affecting the way states can and do conceive of their ends. The increase of state power and the legitimation of modernist goals encouraged by legible technologies are of enormous normative relevance. They encouraged the repression and control of millions of people. So the idea of the balance matters not only to international politics, but to the lives of everyday people.

The Balance as Collective Security

However, the balance operated on another level, not to hide underlying power relations, but to coordinate state action around collective goods and thus to inaugurate a system of collective security. A common, naturalized concept like the Balance of Power, in conjunction with the belief that politics can be subject to control rooted in knowledge, allowed the great powers to exercise collective agency in European politics.

First of all, the balance served as a moral and public good which leaders would sacrifice their purely private interests. This fit in with the domestic understanding of the balance as facilitating “natural harmony” that provided society with a collective benefit. Likewise, at the international level, the balance of power or equilibrium was seen as policy that benefited all members of international society. Knutsen argues that though the

188 Foucault 2007 [1977-78].
189 See Scott 1998, inter alia.
191 Mitzen 2005.
192 Knutsen 1997, 139-141.
policy did preserve the sovereignty and independence of states, its central purpose was to maintain order in the system itself, to serve as a “stabilizing factor” that “became an end in itself.”\textsuperscript{193} Indeed, Watson argues that the central goal of the 19\textsuperscript{th} century balance was not prevention of hegemony by one power, as it had been in 1713, but the exercise of joint hegemony by the great powers collectively.\textsuperscript{194} That is, its significance shifted from representing or encouraging a “weighing” of power to encouraging a balance-as-equilibrium view.

Thus, the concert system permitted collective steering of the international system by the great powers since it allows a number of actors from different cultural backgrounds to converge on a way of seeing and understanding the world. Thus it is in the eighteenth century that the idea that the international system can be controlled and changed emerges.\textsuperscript{195} These efforts continue today in conscious efforts to construct and change the international system.\textsuperscript{196}

V. CONCLUSION

I have argued that early modern European politics was profoundly different from international politics today and that a discursive theory is necessary to account for these differences. International politics is not an ahistorical quest for money and power in which rational actors pursue purely strategic goals. The means and ends of states are continually shaped and changed by scientific discourses. Between 1600 and 1700 changes in the episteme and ontology of political discourse allowed interests and the balance

\textsuperscript{193} Knutsen 1997, 141.
\textsuperscript{195} Schroeder 1992; Mitzen 2005.
\textsuperscript{196} Barnett 1997.
of power to emerge as the central ends of European power politics. In 1600, instrumental goals are often circumscribed and constituted by religious and dynastic discourses. In the course of the seventeenth century, scientific epistemes and ontologies enter political discourse both directly and from the wider European culture. They introduced the mechanist idea that politics can be rationally controlled by knowledge and the materialist representation of the world which undermined the Renaissance discourse. Abstract, calculable, and ordered goals like interests rose and became taken-for-granted. God was replaced by glory, which was in turn replaced by interests and the balance of power. The balance of power is constituted and reconstituted by the dominant scientific metaphors of the day.

An alternative explanation for these shifts is a rationalist-functionalist argument on which competitive pressures forced states to guard and calculate their interests. I have suggested that the functional pressures may not have been as severe we tend to think of them. I have also shown that war and competition was actually embedded in an aristocratic worldview. On my view, the constant wars of early modern Europe were not solely geopolitically motivated. Instead they reflect the shared culture of international society at the time. These wars did encourage states to rationalize their militaries and undertake public works projects that imported scientific discourses. However, on their own, functional pressures to adopt rational techniques can explain neither the decline of God and glory nor the rise of interests in political discourse. This transformation must be explained by reference to the ideas and concepts of political actors and thus by the discourses that constituted action.

The effects of scientific ideas on early modern politics then are not purely instrumen-
tal. Scientific ideas work as a cultural force to constitute interests and the balance of power. My argument builds on the excellent work by Bartleson and Lebow to denaturalize and reconceptualize early modern politics. Bartleson has shown how interests were constructed in the work of political and natural philosophers like Bodin and Descartes. Their articulation of sovereignty and a science of calculation constitutes the state as a scientific object:

States are qualified as objects of knowledge since they all share the minimum requisite of being sovereign, and by enumeration of all further differences which can be detected through comparison, it is possible to create a science of states. I have shown how these ideas moved into core political discourse. They were not merely academic notions, but political conceptions with real force.

The analysis of interests supported the calculation of the balance in terms of territory and souls. These bases of power depended on materialist, calculable conceptions of the world. But the balance of power was not simply “discovered” by political knowledge. A defender of the rationalist-functionalist account may respond that whatever happens in the black box of process may be interesting, but it is not necessary to explain the rise of the balance of power which served state interests. This view ignores the changes within the balance of power itself. The shifting scientific discourse provided new metaphorical bases that in turn reconstituted the practice of the balance. Metternich transformed the balance from a mechanistic system into a field. The field metaphor formed the basis of the balance as a collective institution. This institution formed the basis of peaceful relations amongst the great powers for forty years and helped to contain violence in the sys-

198 Bartleson 1995, 140-144.
tem.

Recent attempts to explain the decline of balancing behavior are caught in a rationalist-functionalist way of thinking. On the rationalist-functionalist view, the absence of balancing under anarchic conditions is a real puzzle. However, on my view, the end of balancing can be readily explained by the decline of the mechanist and materialist discourses that undergirded the balance of power. Balance of power politics is of course not merely a discourse; it depends on material facts and practices. But the balance of power is still a social constructed practice. It is made, not discovered, by political agents. Over the course of the 20th century, the rise of alternative discourses and institutions to manage international politics have made balance of power practices untenable and obsolete. It was and is not a natural fact of politics.

---

200 See Brooks and Wohlforth 2005 for a review and critique.
REFERENCES

Primary Sources

The primary documents for this chapter were selected in two waves. First, I built a large database of translated letters, laws, policy statements, memoirs, and monographs in political philosophy from great power states (France, Austria, Prussia, England, France, Spain). I then read a random sample of these documents. I complemented this with a manual selection of core texts (Viz., Richelieu’s Testament, Louis XIV’s memoirs). Once I had a rough outline in mind, I read another sample of documents, about half were randomly selected and half were manually selected. The manual selection in the second tranche, I focus on documents to help with causal analysis (Viz., Metternich’s memoirs). The documents cited are listed here. The databases will be attached in the methodological appendix.

Defoe, Daniel. 1711. The ballance of Europe: or, an enquiry into the respective dangers of
giving the Spanish monarchy to the Emperour as well as to King Philip.... London: John Baker.
N.A. 1974 [1567]. “Request of those of the new religion to the nobles confederated in the Compromise.” In E.H. Kossman and A.F. Mellink, eds. Texts concerning the Revolt of the Netherlands. Cambridge University Press.
Queen Elizabeth and King James IV. 1839 [1585]. Letters of Queen Elizabeth and King James of Scotland. Camden Society.
University of Wisconsin Press.
States General Defender 1974 [1579]. “A brief discourse upon the peace negotiations which are now taking place at Cologne between the king of Spain and the States of the Netherlands.” In E.H. Kossman and A.F. Mellink, eds. Texts concerning the Revolt of the Netherlands. Cambridge University Press.
States of Holland 1974 [1573], “Missive from the knights, nobles and towns of Holland to the States of the country.” In E.H. Kossman and A.F. Mellink, eds. Texts concerning the Revolt of the Netherlands. Cambridge University Press.
States of Holland 1974 [1574], “A kind of admonition to the States of Brabant, Flanders, etc. on their supplication handed to Don Luis de Requesens.” In E.H. Kossman and A.F. Mellink, eds. Texts concerning the Revolt of the Netherlands. Cambridge University Press.

Secondary Sources


Chapter 4

The Objects of Development
Evolution and Progress in British Colonial Policy, 1860-1950

“The inorganic has one final comprehensive law, GRAVITATION. The organic, the other great department of mundane things, rests in like manner on one law and that is, DEVELOPMENT.”

– Robert Chambers

I. INTRODUCTION: THE RISE OF DEVELOPMENT

In the last chapter I argued the discourse of early modern international politics was constituted by scientific ideas that laid the groundwork for the rise of interests and the balance of power as central ends of international politics. For two centuries these concepts dominated as European states pursued their goals and solved problems within a rationalist, ordered cosmology. Over the course of the 18th and 19th centuries, radical intellectual movements and economic shifts radically changed the ideational landscape of European politics. Enlightenment thinkers argued that the application of reason to social and political life would deliver unending progress. This vision stood in stark contrast with the cyclical metaphors of perpetual growth and decay central to medieval and Renaissance thought. In the 19th century, the industrial revolution demonstrated the power of science and technology and encouraged the idea that humanity could triumph over

2 Kant 1991 [1784]; Knutsen 1997, 138-44. Kant explicitly linked reason to development or maturation.
and control nature. These revolutions in thought slowly transformed international politics.³

After the First World War, U.S. President Woodrow Wilson attacked balance of power politics as an anachronism and took up the banner of progress against cynical cyclical views of history. Liberal ideas were codified in a galaxy of new international organizations designed to routinize cooperation and promote the advance of civilization in all countries of the world. The League of Nations, United Nations, and Bretton Woods institutions were expressions of a new philosophy of international politics: countries could escape the vagaries of egocentric balance of power politics and achieve perpetual progress. While faith in progress was profoundly challenged by the Second World War and the ensuing competition between the US and Soviet Union, the central goals of states continued to widen, moving away from parochial security concerns to embrace humanitarian concerns and economic imperatives.

The history of the British Empire demonstrates these transformations in international politics. In 1750, Britain advocated and enforced the balance of power but by 1950 it was supported the US-led multilateral order oriented toward economic and technological development. In this chapter, I show that the rise and fall of scientific discourses drive the transformation in goals. From 1850 to 1950, British policy shifted from a laissez-faire liberalism cribbed from the pages of Adam Smith and John Stuart Mill to an interventionist doctrine grounded in 20th century social science. The rise of the social sciences, especially, Keynesian economic doctrines and Modernization theory, provided a new set

³ For an account of the enduring influence of Enlightenment ideals see Amadae 2003, 195. Enlightenment ideas also survived as foil for postwar realism. See Guilhot 2011, 153.
of means and ends that move into and transformed colonial practices.\textsuperscript{4} The rise of interventionism to bolster economic development altered domestic priorities and colonial rule. Prior to this shift, British colonialism operated under a strict “self-sufficiency” principle: colonies had to pay for infrastructure and bureaucratic costs with local revenue. It was unthinkable that English citizens would finance the well-being or development of colonial subjects. However, in a series of minor legislative moves between 1929 and 1945 this policy was slowly dismantled and the British Treasury set up a series of funds for “colonial development.” The 1929 Colonial Development Act created a colonial development fund of £1,000,000. In 1940, the Colonial Development and Welfare Act increased the fund to £5,000,000 plus £500,000 for research per annum for the period 1940-1951. After the war, the Colonial Development and Welfare Bill raised the development fund to £12,000,000 per annum for 10 years.\textsuperscript{5}

The effect of the bills on development policy and goals was immense. They funded research and projects that formed the basis of postwar global public policy in the World Bank, the Food and Agricultural Organization, the International Labour Organization, and the UN Educational, Scientific, and Cultural Organization. In this way, late colonial policy had important effects on the goals and values of international society under British and later American leadership. States and international organizations shifted from promoting a tenuous balance of competition amongst the great powers to encouraging the goal of unending economic growth conceptualized as scientific and technological progress. This revolution established the ideological grounds on which the Cold War

\textsuperscript{4} It should, however, be pointed out that 19th century British free trade liberalism was opposed by strong protectionist trends in the United States and Germany. See Earle 1986.

\textsuperscript{5} Constantine 1984.
was fought and laid the foundation for the triumph of Western capitalist modernity after the fall of the Soviet Union.

Why did British colonial policy radically change between 1900 and 1950? On one view the shift from liberalism to interventionism simply reflects a change in state interests. On this view, the 1929 Colonial Development Act is explained by the fact that political elites wanted to use colonial spending as a way to address the dismal economic fallout from the great depression. Similarly, the big postwar push for development can be explained by the financial crisis Britain faced in the 1940s. Colonial development would increase British exports and restore the balance of payments. These are important factors, but they leave many questions unanswered. First, the bills were quite small and were unlikely to spur economic recovery on their own. Nonetheless, the bills had massive ideational effects on the ends of British colonial policy and international society. These effects can only be attributed to a goal change spurred by an ideational process of means-ends change. Second, the state interest explanation cannot account for the underlying change in means. In 1850, a massive colonial development program was unthinkable because the modes of intervention had not yet been invented. How did the idea of intervention come about? How did this idea change colonial ends?

I argue that experts in political economy, labor, nutrition, and public health, created new ways of representing and measuring political reality that permitted new forms of intervention. These new experts marshaled the authority and techniques of the natural sciences to build faith in the application of knowledge to political problems and thereby displaced the biologically-inspired utilitarian-liberal ideas that had heretofore dominated British policy during the 19th century. In short, modernist, interventionist thinking
displaced evolutionary theories on human nature and society. Expert discourse explained individual behavior as a function of external societal and economic forces. This form of analysis was extended to various social scientific “objects” that could be controlled via interventions in social and economic life. It also naturalized the idea that progress or development should be the central goal of political life.

This unfolded as a process of means-ends change. First, Joseph Chamberlain, Secretary of State for the Colonies (1885-1903), and other British officials hired experts to help address the crisis of late imperialism. Experts then imported reductive, calculable ontologies and rationalist, empiricist, objective epistemes. In turn, these changes in the cosmology helped to constitute a variety of scientific objects: “society,” “economy,” “labor,” “public health,” and “hunger.” These “objects of development” could be manipulated with the appropriate application of expertise. As Mitchell points out, these were not simply new names for old things: they marked a reorganization and transformation of processes into new objects.

Second, this set off means-ends change in which the goals of development were changed both in form and content. In terms of form, ends came to be defined and measured with scientific techniques. Thus, the ends of politics became more abstract, ordered, and universal. In terms of content, the ends of politics became more modernist because scientific techniques made it plausible that the objects of the social sciences could be manipulated and controlled in the real world. The upshot was that the means and ends of politics became dominated by social interventions and the idea of development as scien-

---

7 I borrow the phrase objects of development from Ferguson 1990.
tific and technological progress. This latent goal was most clearly expressed in Modernization theories first explicitly articulated in the aftermath of the Second World War. But it also laid the foundation for the rise of the welfare state and the postwar economic order.\textsuperscript{9} The key driver of this change was unintended in an interesting way. Joseph Chamberlain promoted a doctrine “constructive imperialism” focused on economic development as early as 1900, but he was unable to change colonial policy. Chamberlain’s project, however, was nonetheless realized thirty years later, but for different reasons.

Evidence for this argument is drawn from both primary documents from the Colonial Office (CO) and Cabinet Office and the large secondary literature on science and expertise in the British Empire. I have focused the analysis on the British Colonial policy in West Africa to make the analysis empirically tractable.\textsuperscript{10} For my analysis, I studied all documents relevant to the history of development in collections of primary documents edited by historians. For the period 1860-1900, the main source is correspondence between officials on the ground and the Foreign Office in the Foreign Office Confidential Print. For the period 1900-1950, the main source is correspondence between Colonial Office officials collected in the series British Documents on the End of Empire. I have read everything pertaining to general economic and social policy and to general African or specifically West African policy in these collections.\textsuperscript{11}

\textsuperscript{9} Freeden 2003; Ruggie 1982.
\textsuperscript{10} British Colonialism in West Africa provides an interesting and in some ways difficult case for my thesis. Since British racial attitudes portrayed Africans as barbarians, we can expect that they British would be less likely to think that they would be susceptible to scientific and technological progress, thereby limiting the application of scientific means. Also, because the colonies in Africa were relatively new in the late 19th century, compared to say India, the undeveloped state of the bureaucracy may have been less able to employ to scientific means and therefore would be less susceptible to means-ends change.
\textsuperscript{11} In the future, I plan to do original archival research based on a random sample of documents in the archives on the model in other chapters. For now, I rely on the fact that I depend on others to curate the documents to improve reliability and replicability.
My original discourse analysis builds on two bodies of secondary literature. First, I add to the growing literature on the role of scientific ideas in European imperialism a detailed reconstruction of colonial policy discourse that demonstrates a clear change in values.\(^\text{12}\) Whereas previous analyses focus on change in the culture and values of the colonized peoples, I argue that colonial means changed colonial ends within the British government. Second, I contribute to the history of development by arguing that knowledge and tools used shape the goals and ends of development discourse.\(^\text{13}\) In the next chapter, I extend this analysis to the organizations of international society with a study of economic science in the World Bank.

This chapter provides a methodological and thematic bridge between the systemic analysis of the last chapter and the primarily organizational analyses of the next two chapters on the World Bank and UN Peacebuilding. I begin by outlining the liberal worldview of early colonialism in Africa to show that even before the rise of modern expertise, British colonialism worked within a scientific means-ends discourse (II). I then show how the crisis of late colonialism pushed the British Colonial Office to incorporate more and more experts into the service of the Empire. This had a profound effect not only on the form of British colonial goals, which became more abstract, universal, and quantitative, but the content of these ends, which became more modernist (III). I then show, in one example, how the idea of “the economy,” recently historicized and denaturalized by Mitchell, was constituted by colonial practices (IV). In the next chapter I trace how economic imperatives are linked to narratives of scientific and technological pro-


\(^{13}\) Cooper 1989; Escobar 1995; Cowen and Shenton 1996; Conklin 1997; Mitchell 2002; Hodge 2007; Wainwright 2008.
gress to form a powerful “growth imperative” in international society. The history of British colonial policy is an important event in that story.

II. UTILITARIAN LIBERALISM IN THE EMPIRE, 1860-1900

From 1860 to 1900, British colonial policy shifted from its commonsense liberalism to the belief that colonial development would have to be guided by British policy and purse. In general terms, this reflects the underlying shifts in scientific discourses in British society. The 19th century was dominated by biological and Darwinian thinking. The metaphor of growth and natural evolution resonated with the stage definitions of progress popularized by Mill and Smith. However, in the late 19th and early 20th century, the rise of the social sciences imported a more modernist scientific discourse into colonial policy that displaced these earlier discourses.

Scientific Discourse in British Society

The British Empire of the late 19th and early 20th century was a patchwork empire, lacking either organizational coherence or a unifying ideology. It consisted of possessions in India, the West Indies, Egypt, West Africa and East Africa. These were governed by an ad hoc collection of government departments. India was ruled out of the India Office, which employed economists James Mill, John Stuart Mill and John Maynard Keynes. Egypt was governed largely by the Foreign Office. The Colonial Office administered the rest of the colonial empire. Since there was little in the way of top-down direction from the Prime Minister or Cabinet, these offices were free to solve problems as they arose and in ways in which they desired. The absence of a coherent top-down ide-
ology did not, however, result in incoherent policy. Rather, colonial policy was governed and unified by the dominant social norms of British culture in general and the curriculum of the educated elite at Oxbridge in particular.

As a result, colonial policy in the first half of the 19th century was dominated by the morals and concepts of Victorian Liberalism. Victorian Liberalism combined religious and moral exactitude with a linear definition of progress inspired by, amongst others, the work of John Locke, Adam Smith, and John Stuart Mill. These thinkers opened pathways for classical scientific discourse to enter British colonial policy.

Smith and Mill studied and wrote on the natural sciences and aimed to put political economy on scientific foundations. They employed classical scientific discourse in both the means of their analysis and their ends. Smith used a variety of scientific metaphors and sought to build a coherent, ordered system of natural liberty. Mirowski places Smith in a tradition that borrowed its ‘substance theory of value’ from pre-energy physics concepts. His analyses “reduce economic value to a conserved substance in motion, and thus consequently elevate and moral philosophy and political economy to the status of a natural science.” Furthermore, Smith’s account of development as advancing through four stages of progress demonstrates that he, and Mill who followed him on this point, held to a linear understanding of progress reminiscent of the Enlightenment definition of progress as scientific and intellectual development. This account dis-

14 Bell and Sylvest 2006; Bell 2007. In the latter half of the 19th century it would be dominated by the crisis of Victorian Liberalism (Mantena 2007a, 2007b).
16 Smith 1980 [1795]; Mill 1974 [1843].
17 Amadae 2003, 205-07.
18 Mirowski 1989, 186.
19 Mantena 2007a.
placed the ancient and medieval view of change as governed by the “life-cycle of all living things” as a succession of birth, growth, degeneration and death. On the medieval view, statecraft could only forestall decline or manage it, but there was no concept of unending progress.

Under the influence of Darwinian biological ideas the stage-theory of progress was incorporated into a common sense concept of development that borrowed from biological metaphors. Robert Chambers, the eminent pre-Darwinian biologist, likened the unfolding of development to a natural law. But the concept of death was dropped from the biological metaphor, and Smith, amongst others, made popular the idea of progress as “the linear unfolding of the universal potential for human improvement that need not be recurrent, finite or reversible.”

Lorimer calls this Darwinian backdrop “scientific naturalism.” On this view, “humans were to be treated as a part of nature, and human developments over time were presumed analogous to processes in nature.” It was this more than “scientific racism” that informed British public ideas about race. Scholars who aimed to place racial hierarchies on a scientific basis created plenty of controversy, but in the end, “the manifold applications of evolution, some adapted from Darwin but in social and cultural thought of much larger and diverse origin proved a more fertile paradigm upon which to construct the inequality of the world’s peoples.” The British elite certainly believed that their race was superior, but these racialized beliefs did not preclude offering the gifts of progress to colonialized peoples. They had full confidence both in their own racial super-

---

22 Lorimer 2009, 186.  
23 Lorimer 2009, 211.
riority and “belief in the progress of the ‘barbarian’ and the ‘savage’ towards a civilised ideal over time.”

These metaphors are evident in the primary documents. In the mid-19th century British Colonial officials clearly saw their goal as facilitating the interests of the Empire and the world at large by instigating commercial and economic progress. British interests were equated with the advance of “free and unrestricted commerce” which would ameliorate “the conditions of life of the European residents and the civilization and improvement of the native population.” Traditional economic interests aimed at generating revenue for the good of the empire were balanced alongside humanitarian goals such as the suppression of slavery and the advancement of “civilized rule.” In one memo, an official declares Her Majesty’s Government “stated their chief objects to be the abolition of slavery and the civilization of Africa by the extension of legitimate commerce.” Leading up to the Berlin conference in 1884-85, one official argued that the British should press for rules that permitted “legitimate commerce” which “will confer the advantages of civilization on the natives, and extinguish such evils as the internal Slave Trade, by which their progress is at present retarded.” Progress is barred by moral and political evils that the British must remove on behalf of the barbarians.

Why did the British think that eliminating the slave trade and spreading free commerce would lead to civilization in Africa? In short, they believed that free commerce unleashed a natural process of development from primitive to agricultural to industrial

---

24 Lorimer 2009, 194.
28 Partridge and Gillard Vol. 19, 176.
society. Frederick Cooper argues that this rested on a free labor ideology: “the belief that a labor market unconstrained by bonds of personal servitude and governmental coercion provides the best means to achieve a just wage, just working conditions, and social progress.” Suppressing the slave trade would encourage the natural inclinations of free men to sell their labor for wages. The spread of free commerce would unleash “the potentially unlimited capacity for improvement through the human effort of labor.”

Guided by universal natural law communication and trade would stimulate primitive peoples to take up productive labor, generate desires for baubles and trinkets, and thereby lead inexorably to a material and scientific civilization. Neither trusteeship nor direct intervention was necessary. Rather the means to this end was the laissez-faire imperialism of free trade. The liberal doctrine dominated British colonial policy in West Africa well into the 1880s. But after the crisis of Victorian Liberalism, this discourse would be weakened and displaced by a new episteme and ontology that would transform the ends of British Colonialism.

“Constructive Imperialism”

By the late 19th century it was clear that laissez-faire liberalism was not working. Colonized peoples began to organize resistance to the colonial project and development toward “civilization” stagnated. The victims of colonialism failed to act as the liberal ideology predicted. Colonial Secretary Joseph Chamberlain sought to reinvigorate the col-

---

29 This is not without some basis in a careful reading. As S.M. Amadae argues Smith thought that legitimate laws which protected individual rights would “construct a framework for the achievement of material prosperity, given the universal principle of industriousness” (2003, 207).
30 Cooper 1989, 745.
nial project with a doctrine of “constructive imperialism.” In doing so, Chamberlain advocated for an early form of “trusteeship” in which the British government would fund “improvement” via expanding modern communications, railways, medical research, and agricultural training. In advocating these policies, Chamberlain applied an idea already inchoate in Mill and other 19th century imperialists: an alliance between the state and positive scientific knowledge could fuel progress toward “civilization.”

Before Chamberlain, the officials staffing the CO were drawn Oxford and Cambridge and few of them had special geographical or technical knowledge. CO officials took exams like other civil service staffers, but these were not technical examinations. Rather, they reflect the generalist education offered at Oxford and Cambridge. Chamberlain began the process of hiring experts and forming scientific advisory committees that would undertake research and submit findings to the CO.

These changes are reflected in the memoirs of colonial officials, especially that of Cosmo Parkinson. Parkinson’s memoir provides a window into the changing role of expertise in the policy-making process of the Colonial Office in the first half of the 20th century. In 1909, when the young Parkinson arrived at the Colonial Office, it had “no specialist advisers.” The structure of the office made the empowerment of outside experts unlikely. Departments were organized by region and clerks worked for one of the regional offices (West Indies, the East, Nigeria, West Africa and the Mediterranean, and

33 Hodge 2007, 22-23.
36 Parkinson 1945.
37 Hodge 2007, 44-54.
38 Parkinson served as a clerk in the CO for many years before moving up to the rank of Under-Secretary of State for the Colonies
39 Parkinson 1945, 34.
East Africa). Each department had an independent staff and degree of autonomy.\textsuperscript{40}

By 1945, Cosmo Parkinson was astounded by the changes in the Colonial Office. The structure of the CO had been modified \textit{ad hoc}, adding “subject” departments like commerce and social services to the existing regional ones “as the complexity of the work grew.”\textsuperscript{41} By 1945 there was a “veritable galaxy of advisers” on development planning, law, medicine, agriculture, forestry, fisheries, labor, education, business, animal health, food supplies, engineering, marketing, demography, etc.\textsuperscript{42} They brought with them many new committees and more voices needed to be brought in to make decisions.

Recruitment records show that 39% of hires between 1913 and 1952 were natural scientists and a further 20% were experts drawn from technical and social sciences. Joseph Chamberlain began the trend in the early years of the 20\textsuperscript{th} century. However, it was after his departure in 1903 that the influx of expertise accelerated.

<table>
<thead>
<tr>
<th></th>
<th>1913-19</th>
<th>1920-23</th>
<th>1930-39</th>
<th>1940-44</th>
<th>1945-52</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative</td>
<td>190</td>
<td>983</td>
<td>610</td>
<td>166</td>
<td>1934</td>
<td>3883</td>
<td>22%</td>
</tr>
<tr>
<td>Natural Science Experts</td>
<td>167</td>
<td>1720</td>
<td>928</td>
<td>311</td>
<td>3724</td>
<td>6850</td>
<td>39%</td>
</tr>
<tr>
<td>Other Experts</td>
<td>32</td>
<td>514</td>
<td>161</td>
<td>141</td>
<td>2689</td>
<td>3537</td>
<td>20%</td>
</tr>
<tr>
<td>Other Appointments</td>
<td>154</td>
<td>725</td>
<td>548</td>
<td>154</td>
<td>1801</td>
<td>3382</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>543</td>
<td>3,942</td>
<td>2,247</td>
<td>772</td>
<td>10,148</td>
<td>17,652</td>
<td></td>
</tr>
</tbody>
</table>

\textit{Table 4.1. Colonial Office Recruitment, 1913-1952}\textsuperscript{43}

\textsuperscript{40} Within this regional structure, policy-making was quite informal. New papers were received from the Colonial Service (officers working in the colonial territories) and then “minuted” or commented on by the second-class clerks of the regional department. Then the paper would “pass up the ladder until it reached the Secretary of State himself.” On the way, officials would simply comment on the paper as they saw fit, unless someone felt they had the authority to dispose of the memo by putting it aside or giving some action order. (Parkinson 1945, 29).

\textsuperscript{41} Parkinson 1945, 55.

\textsuperscript{42} Parkinson 1945, 56.

\textsuperscript{43} Hodge 2007, 11. Based on Kirk-Greene 1999.
By 1925, more experts than administrators were being hired by the CO.

In addition, new committees were formed to advise colonial officers. Early committees drew on expertise from the natural sciences, such as the Veterinarian Committee, the Geological and Mineral Survey, and the Medical and Sanitary Committee. In the 1930s, advisory bodies were struck to contribute assistance on social and economic issues like labor and education.

<table>
<thead>
<tr>
<th>Year Period</th>
<th>Total Committees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-09</td>
<td>2</td>
</tr>
<tr>
<td>1910-19</td>
<td>3</td>
</tr>
<tr>
<td>1920-29</td>
<td>4</td>
</tr>
<tr>
<td>1930-39</td>
<td>4</td>
</tr>
<tr>
<td>1940-49</td>
<td>10</td>
</tr>
<tr>
<td>1950-59</td>
<td>9</td>
</tr>
<tr>
<td>1960-61</td>
<td>8</td>
</tr>
</tbody>
</table>

*Table 4.2. Growth of Colonial Office Advisory Committees, 1900-1961*

Chamberlain’s project for constructive imperialism was not immediately successful. He could not secure the funds he desired, nor could he convince Parliament or the Treasury to abandon the principle of “colonial self-sufficiency” which barred the use of English money for colonial development projects. His ideas and plans faced resistance from local officials, whom the British state lacked the capacity or inclination to override. Even where Chamberlainite ideas were tried, they gave lie to the optimistic visions of automatic development. Finally, the disastrous intervention in the Boer War galvanized opposition to increased colonial interventionism and spending.

Nonetheless, Chamberlain and his successors hired experts and struck advisory bodies that set off a process of change in colonial discourse. By hiring natural and social sci-

---

45 Hodge 2007.
entists, colonial officials facilitated the entry of classical scientific discourse into the CO. In time, these discourses would constitute new objects of development and replace evolutionary naturalism with a modernist interventionism.

III. THE OBJECTS OF DEVELOPMENT, 1900-1950

In this section, I argue that as experts entered the Colonial Office, this modernist ideology gained in power. At first, experts merely reinforced scientific naturalism by redescribing its assumptions in scientific language. This displaced the laissez-faire liberalism but maintained its central assumption: native societies would adapt to outside conditions. This move, however, had unintended long-term consequences for British policy discourse. By constituting a series of “objects of development” experts made it easy to conceive of controlling or managing these objects directly. This lent itself to a new policy doctrine of modernist developmentalism.

This sequence of events was instigated in the 1920s when labor strikes and revolts shook the empire. The “disturbances” forced politicians and bureaucrats to reexamine colonial policy. To diagnose and fix the problems, the British government turned to outside experts. Thus, Chamberlainite hiring patterns continued in the period from 1910 to 1940.

The rise of technical discourse and social analysis had two distinct effects. In the short-term, these experts made it clear that natives were not the abstract, universal subjects of laissez-faire liberal ideology. They replaced this vision of the native with one embedded in tribal life and argued that British colonialism had ripped the native from the tribe and that this was causing social dislocation and unrest across the empire. The re-
sult was a new colonial policy that took hold in the 1920s: “development along native lines.” This doctrine retained the linear view of progress but suggested that the evolution of barbarian societies toward Western standards was likely to be long and fraught with difficulties. The process could not be, it was argued, manipulated as easily as Chamberlain thought.

In the long run however, the Chamberlainite vision won out. By the 1950s British policy had changed in important ways. While the idea of linear progress was retained, the goal shifted from “civilization” to “the welfare of the subject races” as conceptualized by the social sciences. The means to this end also shifted, from the laissez-faire determinism of the 19th century, to the idea that trusteeship by Western powers was necessary. The League of Nations Mandate system codified the trusteeship doctrine on which, “the tutelage of nations not yet able to stand by themselves must be intrusted to advanced nations.” Trusteehip rested on epistemic and ontological changes in British policy discourses that made it possible and natural to think that progress could be directed or controlled by Western experts who could serve the interests of the natives in backward countries.

“Development along native lines”

The first object to be made was “society.” In early 20th century Britain, the anthropologist Bronislaw Malinowski popularized the idea that the practices and institutions

46 Lugard 1929 [1922], 6.
47 League of Nations 1919, Art. 22. My take is that the League of Nations mandate reflected British thought in the first place, but it also operated to reinforce this trend in a process similar to that described in Keck and Sikkink 1999.
48 See Wagner 2000 for a different account.
of primitive groups were embedded in a set of shared social ties. These institutions and social bonds formed a “society.”\textsuperscript{49} The idea that there was an autonomous object that could explain the behavior of individuals and groups was taken up by colonial social scientists. These social scientists studied “native behavior” to understand the origins of social and economic problems in the colonies.

By the 1920s experts in the CO had codified a doctrine I will call “development along native lines.” The central premise of the policy was, as a 1947 review of the policy put it, “indigenous societies adapt themselves instinctively of their own volition, to changing conditions – and therefore the task of government is merely to guide, not create development.”\textsuperscript{50} This doctrine incorporated the basic Darwinian backdrop of laissez-faire liberalism, but dropped the faith in the power of commerce to unleash automatic development. Instead, experts argued that the development of labor and education required state action.

The origins of the doctrine are often traced to F.D. Lugard (1858-1945), the governor of Nigeria (1914-1919), who expounded the idea of “indirect rule.” The idea was that the British should govern the natives using “native institutions.” This would be cheaper, of course, but it also promised to be more effective in guiding the progress of these tribes toward civilization. Lugard argued that the British Empire had a “dual mandate.” First, it had “moral obligations” to train the natives and create a system of free labor. Second, it had “material obligations” for the “mutual benefit of the people and of mankind in

\textsuperscript{49} Malinowski 1922
\textsuperscript{50} CO 847/35/9 1947 (Hyam Pt. 1, 149).
general.”

In equal measure, Lugard had confidence both in the laws of progress to push this process along and confidence that British trusteeship was necessary to guide it. On the one hand, without the British, natives would remain mired in a state of “inter-tribal war” in which “extermination and slavery were practiced by African tribes upon each other.” On the other hand, “[e]volution and progress are a law of nature” and the “ascent of man to a higher plane of intelligence, self-control, and responsibility” was an inevitable, if painful, process. Governmental institutions, like man’s intelligence, followed a “natural process of evolution” through “stages.” Likewise, in material conditions, there is a “natural evolution of industrial progress.” But these processes could be more or less painful and it was incumbent upon the British to “see to it that the process is accompanied by as much benefit and as little injury to the natives as may be.”

The British turned to the policy of “indirect rule” to bring together development along native lines and trusteeship. Raymond Buell, an influential early 20th century academic, argued that supporters of indirect rule believed that “European standards and methods must be introduced in the form and measure in which they can profitably be grafted onto the pre-existing stock.” That is, while supporters of indirect rule believed that change was “inevitable and in fact desirable” in the long run, too much change in

---

51 Lugard 1929 [1922], 58.
52 Lugard 1929 [1922], 5.
53 Lugard 1929 [1922], 91.
54 Lugard 1929 [1922], 65, 97, 282, 285.
55 Lugard 1929 [1922], 509.
56 Lugard 1929 [1922], 91.
57 Buell 1928, 717.
the short-run would be detrimental. Why? Buell suggested that, “[t]he authors of indirect rule believe that if the traditional group life of the native disappears without a new group life being put in its place, the continent of Africa will disintegrate.”

The consensus on indirect rule as the candidate to guide development along native lines emerged under the influence of anthropologists working in the tradition of Malinowski. Malinowski argued that economic and other institutions were embedded in “society,” that is, a background of “social relations” or ties. On this view, native conduct is controlled by an “intricate” social system that must be preserved. Without the assistance of native institutions, British control would rest on force alone: “If the continent of Africa is to be saved from Anarchy, these bonds must not be cut, but rather annealed.”

In the Colonial Office, these themes are discussed under the problem of “detribalisation.” In the 1920s, colonial officials viewed the colonized peoples primarily as “natives” or “primitives” embedded in tribal communities. To some, this was a problem to be solved. There were plenty of reasons colonial officials wanted to loosen the ties of tribal life. For example, one official thought that stimulating nationalist feelings in the natives would help to quell social unrest. At the present he pointed out, though colonial officials observed many Africans adopting European lifestyles, “we see everywhere clubs and associations which recall in their organisation the old tribal system.” If, instead, the British could teach children “that they belong to one country and that these countries form

---

58 Buell 1928, 717.
59 Buell 1928, 717.
60 Malinowski 1922. On the influence of this on Polanyi and the constitution of “the economy” see Mitchell 2005, 130.
61 Buell 1928, 720.
62 Buell 1928, 720.
part of one Empire’’ it might ‘‘counteract feeling of unrest.’’\textsuperscript{63} For others, maintaining tribal relationships was essential. For D.C. Cameron, indirect rule protects ‘‘the natural evolution of tribes in a larger system.’’ The problem with trade unions in Africa was that they reduced ‘‘authority of the natural rulers’’ and that this does not allow natives ‘‘to administer their own affairs through their own institutions.’’\textsuperscript{64} For these officials, the British were there to guide development along native lines. These primitive peoples needed to evolve naturally through the stages of progress on their own terms. British guidance was necessary, but the hand of empire should be light.

By the late 1930s, the idea that indirect rule could protect and maintain pre-colonial tribal society was discredited. An important committee on higher education concluded that ‘‘Western civilisation has irrevocably impinged upon the old tribal organization, and former habits of life and conduct have been blurred beyond recognition.’’\textsuperscript{65} British colonial policy was now forced to deal with the problem of ‘‘detribalisation.’’

This discussion shows that the CO had a conception of ‘‘society’’ as an important factor in colonial development. At first, it seemed that these ideas would moderate the colonial impulse to develop and improve colonized societies. After all, if complex social ties could not be easily manipulated, then societies needed to evolve on their own terms. However, as we shall see, the problem of detribalisation seemed severe and demanded solution. The constitution of other objects of development gave colonial officials the impression that discrete elements of colonial societies could be manipulated. This permitted the late-colonial development discourse to emerge.

\textsuperscript{63} CO 554/74/4, no 1 1926 (Ashton and Stockwell Pt. II, 223).
\textsuperscript{64} CO 323/1077/12, no 11 1932 (Ashton and Stockwell Pt. II, 235).
\textsuperscript{65} CO 822/83/11 1937 (Ashton and Stockwell Pt. II, 256).
The Objects of Colonial Development

Social scientific experts operating within and around the CO imported scientific concepts that changed the way colonial officers conceptualized and measured colonial ends. This unfolded in both a specific and a more general sense. In particular, new means were calibrated to new ends like “nutrition” and “welfare.” In a more general sense, this added up to a redefinition and conceptualization of “development.”

The lynch-pin in this means-ends change is the constitution of a new series of objects that allowed new goals to be created. The objects shaped the way officials thought about colonial development because they introduced representational constraints. By making nations appear as if they were comprised of a set of isolable, measurable entities, the constitution of scientific objects made it possible to conceive of development as a series of interventions to manipulate these objects. At first, it was thought that these entities would evolve according to natural scientific laws, but over time the perceived need for government intervention would grow.

Labor

As we saw above, the idea that free labor inexorably created progress was central to British colonial policy in the late 19th century. In the early 20th century, social scientific study revealed that colonized peoples did not act in the idealized manner imagined by free labor ideology. Colonized peoples did not automatically enter the labor market and British and French colonies experienced chronic labor shortages. Colonial governors

---

66 Cooper 1989, 746-47; Cooper 1997.
turned to forced labor campaigns in West Africa. While many governors denied using forced labor, plenty admitted it, offering strained justifications.67 Many colonized peoples who did enter the labor force refused to accept the deplorable conditions and petty wages. In the 1920s and 1930s rising trade union activity and labor “disturbances” in African and West Indian colonies forced the Colonial Office to grapple with the question of labor rights. The disturbances received considerable attention in both the domestic and international media. The International Labor Organization applied pressure on the British government to resolve the disturbances.68

The riots fuelled a debate on the rights of colonized peoples. Did primitive peoples have the same rights to organize as British citizens? A central question in the debate was whether the labor associations were a “natural” or “artificial” development in Africa and the West Indies. In 1932, the well-respected governor DC Cameron asked whether it was “a natural growth warmly esteemed by the people themselves, or merely a somewhat artificial system of administration which owes its existence to our presence.”69 If labor unions were an artificial development or the work of “nefarious persons” seeking “mischievous ends” then colonialized peoples had no rights and therefore no new labor legislation was necessary. One official stated the consensus principle that “the laws of people should be a natural growth developing to meet the conditions obtaining” but that these conditions are not met in Nigeria which was not an industrial but an “agricultural country in which the bulk of the people are comparatively primitive and the farmer

68 CO 323/1071/13, no 2a 1930 (Ashton and Stockwell Pt. II, 225).
69 CO 323/1077/12. no 11 1932 (Ashton and Stockwell Pt. II, 234).
is generally speaking a small holder working his farm.” 70 The “artificial” argument lost out in debate to the belief that the constitution of workers into “labor” was a natural process. Colonial officials decided that “the formation of [labor] associations in the Colonial dependencies as a natural and legitimate consequence of social and industrial progress” and colonial governors were ordered to implement labor legislation along the lines of British law. 71 Therefore, at first, the new object of labor was believed to be subject to natural evolution that could only be guided by politics. All colonial officials could do was protect free labor and labor rights with legislation.

Throughout the 1930s, the evolutionary view gave way to the idea that experts could manipulate and manage the labor supply directly. At first, “labor experts” were employed by the CO to provide better information and offer consultation on how to deal with the “disturbances.” 72 As one official argued, “[t]he Northern Rhodesia trouble is an example of the kind of thing we may get more of unless expert knowledge at the Colonial Office, as well as locally, is available.” 73 But these experts went beyond this mandate. Intentionally or not, they constructed labor as an object of policy that could be changed with various social and economic programs. They advocated measuring labor in statistical terms and called for experts to advise colonial governments on how to deal with the “labor problem.” 74 If labor conditions would not evolve of their own accord, state interventions could push that evolution along. 75

70 CO 323/1077/12, no 11 1932 (Ashton and Stockwell Pt. II, 235).
71 CO 323/1071/12, no 2a 1930 (Ashton and Stockwell Pt. II, 226).
72 CO 323/941, no 44110 1925 (Ashton and Stockwell Pt. II, 220-1).
74 CO 323/941, no 44110 1925 (Ashton and Stockwell Pt. II, 220-1).
75 Cooper 1989.
Public Health

In early 19th century Britain public health issues like hunger and disease were, like labor, part of a divinely ordained Malthusian moral universe in which ill health was a natural fact caused by immoral behavior and lack of virtue. Over the course of the 19th century public health research and legislation had transformed “disease” from a moral condition to a scientific object that could be controlled by sanitation and medicine. Underlying this shift was the scientific discovery of bacteria and viruses. This discovery made it possible to see that epidemics were the result of the social and economic conditions that kept individuals in crowded, dirty conditions that facilitated the spread of disease. Scientific concepts and techniques were used to abstract disease from its local and cultural context. Once it was constituted as an object, disease was amenable to general treatments. The discovery of disease therefore permitted the conceptualization of national health policies. As one cabinet report puts it, water and sanitation research allowed “public health” to be “controlled by legislative action” on a national level.

Colonial policy exhibited the same pattern of change. At first, health and disease were explained by environmental and racial factors that were beyond control. As the public health movement expanded into the colonial sphere, officials began to see medical problems as manipulable. Addressing public health problems became part of the trusteeship project. The earliest sustained attention to medical problems comes in 1925, after labor disruptions in East Africa prompted a rethink of policy there. The report of the East Africa Commission argues that “medical services” must be reevaluated because

---

76 Vernon 2007, 2.
77 CAB 24/250 1934, 9.
78 CAB 24/173 1925.
of “the necessity for providing the means to be taken to conserve the labour supply and
to ensure its efficiency.” 79 Thus “care of the natives” emerged as a way to facilitate the
“exploitation of the natural resources.” 80 The East African report reveals a new rationalist
episteme that privileges cultural causes. It suggests that the central causes of infant
mortality and the prevalence of worm disease in Africa are “superstition” and “ignorant
native customs.” 81 However, the ability to expand medical services is limited, the report
argues, by the lack of “satisfactory statistics” and properly trained personnel. 82

At first, medical policy aimed to build hospitals and treat individuals. By the late
1930s, the CO advocated addressing “the health problems of the people as a whole.” 83
Policy thereby shifted from medical policy to “public health.” In the latter discourse,
“public health” is constituted as an object or “problem” that can be solved with expert
knowledge. 84 This presupposed that there was something that could be identified as the
“general standard of health” that could be raised by qualified medical staff. 85 This shift
in emphasis led to calls from within the CO for a change from an urban, hospital-
centered policy to the use of “agricultural and officers and sanitary inspectors who
could go into the villages and teach and advise the natives on questions relating to
crops, elementary sanitation and the protection of water supplies.” 86

The same project that transformed the management of disease was to be carried out
in the management of food. By the beginning of the 20th century, natural scientists began

---

79 CAB 24/173 1925, 53.
80 CAB 24/173 1925, 53.
81 CAB 24/173 1925, 54-55.
82 CAB 24/173 1925, 54, 57.
83 CO 847/16/9, no 2 1939 (Ashton and Stockwell Pt. II, 280).
84 CO 950/1 1938 (Ashton and Stockwell Pt. II, 269).
86 CO 847/16/9, no 2 1939 (Ashton and Stockwell Pt. II, 282).
to revise the image of hunger as caused by immorality and indolence. The success of public health programs was held up as a model. Government action could effect “improvement in the physique and general health of the people comparable in extent to that which in the nineteenth century followed the introduction of cleanliness and sanitation.”

What was required was “the acceptance by the state of a national feeding policy based on scientific knowledge... [to] bring the greatest benefits to all sections of people.”

The pressure for government food policy grew out of the social analysis of poverty by people like Seebohm Rowntree. In his studies of urban poverty, Rowntree argued that hunger was caused by social factors. This was made possible by a reconceptualization of what hunger was. Just as disease had to be abstracted from its local and cultural context, hunger was also constituted as a scientific object before it entered government policy. Rowntree conceived of the human body as a motor and food was necessary as fuel. This fuel was composed primarily of calories and protein. This reductive conception of food permitted the creation of an abstract, quantitative standard of nutrition. Rowntree argued that calories and protein could be combined into a “man-value” that indicated the amount of food necessary to maintain a laboring man. The discovery of vitamins contributed to this reduction and quantification of nutrition. In this way Rowntree and others “developed a range of techniques that appeared to allow objective, standardized and universal ways of defining and measuring hunger.”

---

87 CAB 24/250 1934, 9.
88 CAB 24/250 1934, 9.
89 Rowntree 1901.
91 Vernon 2007, 83.
then redefined as “failure to reach a minimum nutritional standard.”\textsuperscript{92} As James Vernon argues, this constitution of hunger as an object was necessary for the later doctrine of the League of Nations and other International Organizations that “poverty and hunger, in Britain and all over the world, could be eradicated if the market were disciplined by scientific planning.”\textsuperscript{93}

An abstract conception of food was much more easily woven into economic doctrines and government policy. At first, government officials drew on but ultimately resisted the new nutrition ideas even in response to the exigencies of the First World War. During the war, food planning committees referred to “the energy” provided by food, but not to the basic sources of this energy.\textsuperscript{94} One official explicitly argued against standardized rations because “the requirements of nutrition vary with sex, age, and the character of the occupation.” Uniform rations would be foiled by the many different family compositions and “a country which introduces a bread ration soon finds itself urged to grant supplementary rations.”\textsuperscript{95} On his view, standardization would simply not work.

However, in the 1930s, the spread of nutritional doctrines like that of Rowntree allowed public health officials to argue that the central health problem in Britain was the over-consumption of cereals and the under-consumption of proteins and vegetables.\textsuperscript{96} In one cabinet report, this argument is linked to advocating a “national food policy” that entailed “the assumption by the state of a general responsibility for ensuring an ade-

\textsuperscript{92} Vernon 2007, 86.
\textsuperscript{93} Vernon 2007, 135.
\textsuperscript{94} CAB 24/7 1917, 1.
\textsuperscript{95} CAB 24/7 1917, 4.
\textsuperscript{96} CAB 24/250 1934, 6.
quate standard of nutrition among the people.” That the state took this challenge up is demonstrated in postwar documents on food import programmes. One postwar report demonstrates a core concern with “protein content” as establishing the basis of a “basic requirement” for health.

This reconceptualization of food had important consequences for colonial policy. If food was just calories abstracted from local and cultural contexts, then it did not matter where these calories came from. Thus, any barriers to making food policy on the basis of agricultural science and the economic doctrine of comparative advantage could be removed. The Labour party argued in 1943 that agricultural policy in African countries should focus on developing “crops for which they are best suited, irrespective of whether these are foodstuffs for local consumption, or produce for export.” On the Labour Party view, nutrition is purely abstract:

[T]he securing of an optimum diet is an object not so much of agricultural policy...as of general social and economic policy, and is to be attained not by trying to produce as much as possible at home but by disposing the productive resources of the territory as to secure its inhabitants optimum nutrition and...well being.

Cash crops provide an abstract quantity of calories or nutrition that, without cultural context, is just as good as any other form of food. Compare this perspective to that offered by a 1927 article on African diets by John Boyd Orr and J.L. Gilks:

Little or no meat is eaten, and such as is consumed is largely on account of superstition or religion... Absence of meat from the dietary does not come about as a result of preference. Cattle and goats are valuable possessions, chiefly used in the purchase of wives; they cannot therefore be slaughtered in a light-hearted

---

97 CAB 24/250 1934, 9.
98 CAB 129/9 1946; Cf. CAB 24/250 1934.
99 CO 323/1858/9 1943 (Ashton and Stockwell Pt. II, 159).
100 CO 323/1858/9 1943 (Ashton and Stockwell Pt. II, 160).
way.101

In their account food is embedded in local customs and practice. However, the historical irony of their research is that while it recognized cultural context, it also posits an objective standard which undermined that context and led easily to the Labour Party view of nutrition as an abstract universal. If East Africans had a “dietary deficiency,” it was natural to argue that their food supply should be modernized. As Brantley has argued, “[b]y emphasizing only those dietary deficiencies which could be chemically measured, the authors gave greater force to the meager scientific findings” which in the end could not offer a “technical solution” to the problem of nutrition in East Africa.102 Indeed, as we shall see, “development” would be offered up as the solution to these problems.

_Education_

The transition from an evolutionary to an interventionist model is also evident in education policy. In the 1920s, British education policy was cautious, fearing that education led to African nationalism and the degeneration of Western civilization.103 One British official warned against the French assimilationist education doctrine: “The French aim at creating a new race of black Frenchmen and I cannot wish them success in their attempt which in my opinion will hasten the decline and fall of Western civilization.”104 As late as 1934, Colonial officials argued that education, like labor, must evolve slowly, since it is “a plant of very slow growth.”105

---

101 Gilks and Orr 1927, 561.
103 CO 554/74/4, no 1 1926 (Ashton and Stockwell Pt. II, 223).
104 CO 554/74/4, no 1 1926 (Ashton and Stockwell Pt. II, 223).
In the 1920s, Harvard professor Raymond Buell wrote a dissent to this policy in *The Native Problem in Africa* (1928). Buell traveled extensively in Africa to gather material for the book, which was widely read and influential.\(^\text{106}\) He argued that to achieve progress Africans had to acquire “knowledge, elementary though it may be, of the principles upon which modern machinery and medicine and other apparatus of the Western world are based. In other words, they must be given a scientific and a technical education.”\(^\text{107}\)

On his view, the natives had exercised considerable skill in the “intricate devices of European administration” but “they experience greater difficulty in performing duties such as the construction of public works and the improvement of public welfare which require some applied knowledge of European science.”\(^\text{108}\) Here Buell initiated a line of argument on which education was justified as a necessary means to scientific and technological progress.

By the late 1930s, similar views were common sense in the Colonial Office. A major commission on higher education took up the “welfare” development discourse and argued that scientific education was central to the management of changes that were now inevitable. The British had, after all, already irrevocably “impinged upon the old tribal organization” and it was no longer possible to protect traditional ways of life. The authors suggested that “[t]he African has been taught that European ways of life are superior to his. He sees that European methods and education give control over the forces of nature and the circumstances of life” and thus “demands education as a right.”\(^\text{109}\)

---

106 Kirk-Greene (In Hailey 1979) reports that alongside works by F.D. Lugard, Margery Perham, and Lord Hailey, Buell’s text was one of four most “authoritative” texts on African development.

107 Buell 1928, 727.

108 Buell 1928, 727.

the importance of education is linked to the narrative of scientific progress, which offers control over nature. The report’s authors took it for granted that control over nature was a desirable end and this justified increased Westernization and education of the natives. This in turn, justified the trusteeship model of colonialism: “if the concept of trusteeship, if the method of Indirect Rule, are to be anything more than glib evasions of responsibility they must assert that the African shall in due course reach full maturity and take his place among the peoples of the world.”

The doctrine of trusteeship here rests on an organic development metaphor: the need of the British to guide the African toward “maturity.”

Moreover, officials argued, education was necessary to provide the necessary expertise to guide development. The colonies faced an “increasing need for conserving the fertility of the land and encouraging more scientific methods of production.” The problem was finding the necessary staff, especially since “European medical officers, agricultural experts, engineers, and technicians are necessarily very expensive.” Thus, “the only remedy lies in the employment of trained African personnel.”

It is significant that calls for education of the Africans were justified with scientific and technological ideologies. Alternatively, colonial officials could have justified education on religious or traditional moral grounds. This would indicate that these discourses were powerful and that they informed visions of progress. Instead, education was justified as necessary to development conceived in scientific and technical terms. The colonies needed to produce their own experts to solve the problems of labor, land, health,

---

and hunger on their own. This would help them reach “maturity” as peoples enjoying scientific and technological modernity.

The means to this end, moreover, constructed “education” as an object that itself required experts to develop the “machinery” and design “schemes” which would ensure the “progress” of education in Africa and the other colonies. This in turn depended on the reconstitution of the “native” himself as a subject capable of “development.”

Development by Design

When the Colonial Office brought in scientific experts it opened a channel for classical scientific discourse to enter into British colonial policy. This discourse constituted labor, public health, and education as objects that could be represented in abstract terms and rationally controlled by government policies formulated by experts. This undermined the evolutionary scientific naturalism that supported “development along native lines.” Whereas previously development was governed by the natural evolution of all physical and social life, development could now be designed and pushed by state intervention.

There were a number of factors that contributed to the rise of development as a governmental priority between 1929 and 1945. First, it was thought that colonial development would help alleviate problems at home brought on by the depression in the Western economies. If the economic situation in the colonies improved, this would bolster exports and employment in Britain. Second, colonial officials hoped that economic in-

---

Interventions would raise revenues and legitimate the colonial enterprise in an era of self-determination. In 1925, one colonial official argued that to get the new Labour government on side, “we shall have to satisfy labour opinion that we do not lag behind other countries in the safe-guarding of native labour in industrial employment… we shall have to be in a position to make good our case on these matters in Parliament.”114 By 1938 the same ideas had risen to the Cabinet where the secretary of state suggested that the legitimacy of the British Empire hinged on its behavior in the colonies: “In future, criticism of Great Britain would be directed against her management of the Colonial Empire, and it was essential to provide as little basis as possible for such criticism.”115 Here the ‘civilising force of hypocrisy’ pressed the Colonial Office into treating native laborers better than they might otherwise have. In the 1910s and 1920s, the Treasury refused to alter the policy of “self-sufficiency”: colonies must pay for infrastructure and improvement schemes from their own revenues. However, after 1929, the Treasury acquiesced and approved government funding of development projects in the colonies.

One might interpret this as evidence that expert-driven development ideas were merely a functional response to state needs. On this view, the role of scientific knowledge in colonialism was purely instrumental. While instrumental motivations were important in changing British policy, they cannot explain the origin or effects of the development discourse. First, I have shown above that experts made possible and legitimated the development discourse by constituting the objects of development. Second, whatever the origins of these pro-development policies, they would become institution-

114 CO 323/941, no 44110 1925 (Ashton and Stockwell Pt. II, 221).
115 CO 852/190/10, no 12 1938(Ashton and Stockwell Pt. II, 65).
alized and naturalized over time, contributing to a change in ends and values. These objects were constituted alongside a new idea of development as scientific and technological progress. This effect cannot be explained by the instrumental view.

By the late 1930s, it was commonsense that colonial development required an interventionist state and that this required more scientific expertise. The work of Lord Hailey, which began circulating in 1938, but which was not codified in writing until 1942, marks a watershed moment. Hailey’s work links development, science, and the state together into a new ideology of late imperialism. Hailey argued that whereas the British used to govern on laissez-faire principles, the government should now “take an active part in developing the resources of the territory or in the organization of measures for improving the standard of living.” This “will involve the Colonial Office in an effort to maintain common standards of progress and development in the Colonial pire.” Hailey could now posit a “common standard” as the goal of a universal process of development because new objects of development were constituted. Discourses of labor and education had posited the native as a universal actor, subject to the same laws and rights of nature, and thus deserving of a European “standard of living.” Discourses of public health made it possible to conceive of this standard in abstract, normalized terms, even if it would be difficult to operationalize.

Hailey reiterated the by now unchallenged belief that all this would mean that the purpose and expectations of the Colonial Office would change:

116 Lord Hailey’s report is cited often in CO documents. E.g., CO 847/25/7 (Hyam Pt. I, 98-99), CO 847/16/9, no 2 (Ashton and Stockwell Pt. II, 280).
117 Hailey 1979 [1940-42], 3.
118 Hailey 1979 [1940-42], 4.
The Colonial Office, as Mr. Amery has said, will no longer be viewed merely as an agency for securing “peace, order and good government” in the dependencies. It will be viewed, to use his words “as a Ministry of Colonial Transport, a Ministry of Colonial Health, a Ministry of Colonial Education, or perhaps it might be more accurate to say as a general staff for the whole Colonial Empire in respect of all those matters.”

Along these lines, in 1939 Colonial Officials began pushing for an enlarged Colonial Development and Welfare Act to provide funds disbursed by a “strong advisory committee to examine schemes.” One official remarked, “unless the fund for financing is administered by a specially appointed committee, responsible only to the Secretary of State and the Treasury, we shall not get the services of the best scientific advisers.”

A report on colonial research concluded the “basic data [is] required in all fields” and this should be collected by surveys on the “incentives” and “standard of living” in peasant communities. On this basis, experts must work on the “extension and application of social and economic theory and methods developed in the older industrial countries to the particular conditions of the colonies.”

Over time, the idea that natives societies should develop along Western lines was woven into discussions of increasing imperial production. This was never clearer than after the start of the Second World War and the necessity of increased and more efficient production was driven home in all government departments. The Colonial Office set out to “maintain and intensify production.” But officers in the CO did not leave it at that; they set out to justify and naturalize development. In 1938, one official argues that yes,

---

120 Hailey 1979 [1940-42], 4.
121 CO 859/19/18, nos 1 & 2 1939 (Ashton and Stockwell Pt. II, 105).
122 CO 859/19/18, nos 1 & 2 1939 (Ashton and Stockwell Pt. II, 106).
125 CO 859/19/18, nos 1 & 2 1939 (Ashton and Stockwell Pt. II, 99).
the British have duties to the taxpayer and the outside world to ensure natural resources are not neglected and that commerce is bolstered, but in addition, “our duty to the people themselves is to promote their social and economic welfare, to stimulate the desire for... a higher standard of living.” Another argued that “it is an imperative duty to do all that is practically possible to raise the standard of living of such people, even during the war period, alike for humanitarian, political, economic and administrative reasons.” Officials began to plan for post-war development schemes as an end in their own right. On official suggested that the office begin “laying plans now to make rapid progress possible after the war.”

Of course, this new doctrine of development would require “expert personnel required for conducting preliminary surveys... on approved schemes.” These experts would permit some kind of control in a domain previously ruled by Supernatural forces: “There has been no staff to look ahead and to direct; prosperity and depression have been gifts from God or Satan... economic development of the colonies deserves to be carefully planned and as carefully controlled.”

Colonial officer Sydney Caine laid out the new doctrine in an important 1943 memo. The state was to be the locus of control: “the state...must develop machinery... needing specialized qualities different from those of ordinary administration and needing continuous thought.” This machinery could be created along the lines of the Russian planning commission or the American Tennessee Valley Authority. This would require a

---

126 CO 852/214/13, no 1 1939 (Ashton and Stockwell Pt. II, 78).
127 CO 852/482/6, no 11 1941 (Ashton and Stockwell Pt. II, 128).
128 CO 852/482/6, no 11 1941 (Ashton and Stockwell Pt. II, 132).
129 CO 852/482/6, no 11 1941 (Ashton and Stockwell Pt. II, 132).
131 CO 852/588/1, nos 1 & 2 1943 (Ashton and Stockwell Pt. II, 168).
“revolution in Colonial Research”: “we need to be able to send freely and promptly experts of every kind to particular Colonies to report on particular possibilities of developments.” 132 Continuous feedback would establish a “habit of investigation.” 133

Hailey and Caine promoted a conception of development as a process that depends on the proper application of scientific expertise rooted in good data. Moreover, this is a process natives in Africa and elsewhere should unquestionably go through. This is taken-for-granted. Long gone is the laissez-faire liberalism of the late 19th century in which progress was the natural result of releasing labor from tribal constraints via commerce and interaction. The 20th century definition of development kept the Victorian ideal of linear progress, but inserted expertise as a key driver of these changes. In this way developmentalism combined the naturalism of Darwinian worldviews to the emerging modernist faith in the application of scientific knowledge to the world.

In 1940 Parliament passed a new Colonial Development and Welfare Act. The bill made available £5,000,000 per annum to back loans to colonial governments. In addition it provided £500,000 for research per annum for the period 1940-1951. This marked the end of the policy of “self-sufficiency” and extended the principles of the welfare state to non-citizens. After the war, the Colonial Development and Welfare Bill raised the development fund to £12,000,000 per annum for 10 years. This provided both a technical model and a moral foundation for postwar development lending to the newly independent countries of the Global South.

132 CO 852/588/1, nos 1 & 2 (Ashton and Stockwell Pt. II, 170).
133 CO 852/588/1, nos 1 & 2 (Ashton and Stockwell Pt. II, 170).
IV. MAKING ECONOMIC GROWTH, 1913-1960

The new ideal of development as control of objects delegitimized and displaced “development along native lines.” Britain did not need to wait to native societies to evolve of their own accord; it could fuel economic progress. This privileged a rationalist, Chamberlainite view of development policy on which the state could control and direct economic life. This change in the means and ends of the colonial project had important effects on the means and ends of politics beyond Britain and its colonies: it made possible and natural the creation of what would become the object of development, the economy.

Detribalisation Necessitates Economic Development

By the end of the Second World War British colonial policy was no longer dominated by the means and ends of “scientific naturalism.” The primary documents themselves give an account of the transformation. One report argues that in the 1920s British colonial policy was shaped by the doctrine of indirect rule on the underlying assumption that “indigenous societies adapt themselves instinctively of their own volition, to changing conditions – and therefore the task of government is merely to guide, not create development.”¹³⁴ However, by the 1940s, as a particularly astute CO analyst put it, it was “no longer reasonable to think of colonial policy in terms of the gradual adaptation of traditional societies carefully preserved against radical change.”¹³⁵

In short, officials took up the view that progress toward a modern, scientific civiliza-

¹³⁴ CO 847/35/9 1947 (Hyam Pt. 1, 149).
¹³⁵ CO 847/38/3 1947 (Hyam Pt. 1, 155).
tion was not an automatic process. Though it took time, officials came to accept “the fact that native indigenous institutions will not spontaneously evolve of their own initiative to more civilized and efficient forms without a great measure of direct government and initiative of Indirect Rule.” ¹³⁶ One of the new principles of development would be to “[f]ormulate principles on general basis for whole of British Africa – for detribalized, clan-organized, and traditional chief-organised areas.” ¹³⁷

This is one of the few places where a call for “general principles” is offered without a qualification that such general principles must be adapted to local conditions carefully. One potential reason for this is that the British officials were now conceding that they had destroyed the cultural ties that form the foundation of cultural diversity. By recognizing that indirect rule had failed, they were implicitly recognizing that native institutions could no longer maintain social order. Therefore, officials concluded, a general plan was necessary to spur tribal development.

The hope had been that societies, suitably protected by British trusteeship, would be shepherded into modernity on their own terms: “indigenous institutions should be preserved intact from the brunt of Western influences so that they may evolve spontaneously.” ¹³⁸ But in the postwar era, officials began to think that native societies had social problems, growing populations, land shortages, and deteriorating soil conditions that undermined their faith in natural evolution. ¹³⁹ Social scientific research, in part funded by the Colonial Development Act of 1929, found that external influences, such as “capi-

---

¹³⁶ CO 847/35/9 1947 (Hyam Pt. 1, 153).
¹³⁷ CO 847/38/3 1947 (Hyam Pt. 1, 153).
¹³⁸ CO 847/38/3 1947 (Hyam Pt. 1, 151).
¹³⁹ CO 847/38/3 1947 (Hyam Pt. 1, 155).
tal flows” were having a “profound” effect on “tribal society.” This is one of the first times the word “society” is used in CO documents. As a separate object, society could be conceived of having a life and properties of its own. Society itself could be threatened, but its problems could be diagnosed and treated by experts.

With life in “tribal society” deteriorating rapidly, there was no option but to press ahead with “positive action” by the government to spur economic and political development, which in turn would replace tribal society with another. Buell clearly stated the problem: “if the traditional group life of the native disappears without a new group life being put in its place,” Africa would disintegrate. Social scientists and colonial officials thought political and economic development would build a new society where old tribal life had been. The changes that had wrought natives from their traditional contexts now pressed them to pursue development: “Detribalisation goes hand in hand with economic development.” British colonial policy was thus forced to abandon development along native lines and work to bring industrial, Western features to all aspects of native life.142 The movement “towards modern standards of civilized government” would require a British push.143

Development, as we saw above, included progress along social, political and economic lines. Socially, modern labor and education standards were to be introduced. Politically, indirect rule was to be at first slowly, but later quickly, replaced by representative democratic institutions. How were the goals of economic development changed?

140 CO 847/38/3 1947 (Hyam Pt. 1, 155).
141 CO 847/38/3 1947 (Hyam Pt. 1, 155).
142 This is perhaps a different version of the erasure of difference story we are used to. British colonial officials tried very hard to preserve difference within their racist and humanitarian worldview.
143 CO 847/38/3 1947 (Hyam Pt. 1, 151).
Making the Economy

In the early 20th century, the British government conceived of “economic development” narrowly as increases in exports, and thus revenue, and thus profit for the metropole. There was no concept of “the economy” beyond goods produced and traded. At the same time, however, economists were busy consolidating their discipline and in so doing constituted “the economy” as an abstract object independent of society and culture. Mitchell has recently revolutionized the history of economic thought and policy by pointing out the simple fact that there was no such thing as “the economy” before the 1930s. Prior to that, the term “economy” was synonymous with “prudent management.” Adam Smith’s “political economy” referred to political management as in the original meaning of the term, household management. As we saw in the last chapter, the relevant object in the political economy of Mun and Petty was a “structure of production or exchange” that depended on the household metaphor for its coherence.

Mitchell argues that the emergence of the economy was not simply nominal; it was not simply that a set of processes was deemed “the economy” for the first time. Rather, he argues that economists and policymakers actually made the economy. This process was neither solely cultural nor material: it was a process of creating new practices, new concepts, and refashioning them into a universal model of “economy.”

At first, the constitution of the economy grew out of the colonial perspective. Mitchell argues that problems of colonial rule provided the impetus for the constitution of this

---

145 This differs from the history of political economy in Polanyi and Foucault. See Mitchell 2005, 127.
147 Mitchell 2002, 5-7, 82.
new object. The colonial position of the Western powers provided an “outsider” perspective that facilitated the view of the colonized society as a separate object.\textsuperscript{148} While this colonial perspective made the idea of “the economy” more likely, the concept was slow to form and work its way into Colonial Office commonsense. For example, in 1917 wartime shortages necessitated “economy in the uses of wheat and flour for purposes other than human food.”\textsuperscript{149} In the 1930s a cabinet “Economy Committee” deals primarily with spending cuts.\textsuperscript{150} The term still means prudent management at this time. When what we would call “the economy” is talked about in the 1920s, it is mentioned only using other terms. In F.D. Lugard’s seminal text economic development is conceptualized not as growth, but as arithmetic increase in trade and production numbers.\textsuperscript{151} Raymond Buell’s list of the central topics in native administration lists only “revenue and trade” and “taxation.”\textsuperscript{152}

Only in the 1930s, when Keynes himself formulated the concept of “economic society” or “economic system,” did the inchoate concept of a bounded entity come into view. Lord Hailey, in his influential Cabinet report, referred to the “economic structure” of the colonies, which would soon “involve schemes for government control.”\textsuperscript{153} Another report referred to “economic welfare,” which reveals a conception of an autonomous economic sphere of society. During the Second World War, when economists, including Keynes himself, worked with the CO and other government departments, a modern concept of economy was in use. Colonial officials then spoke of “economic activity,”

\textsuperscript{148} Mitchell 2002, 100. Cf. Keynes.
\textsuperscript{149} CAB 24/7 1917, 3.
\textsuperscript{150} CAB 34/223 1931, 1.
\textsuperscript{151} Lugard 1929 [1922], 45, 498, 520.
\textsuperscript{152} Buell 1928, 645-55.
\textsuperscript{153} Hailey 1979 [1940-42], 7.
“circulation,” and “liquid form.” Only in 1949, though, is “the economy” directly referred to in my sample. An “Economic Survey” report from 1949 celebrates economic progress, but warns that the “rapid expansion in many parts of the economy is drawing to a close. The process of growth has changed.” Namely, whereas economic growth in the early postwar years relied on returning soldiers adding bodies to the labor force, “[f]uture progress” would depend on new capital equipment and greater productivity via “improved organisation" and the “application of our scientific knowledge.” The report also offers the first discussion of “National Income and Expenditure” as an economic indicator. However, at this time, it is not the central figure in the report. It is listed fourth, after production, output, and the Balance of Payments. Moreover National Income seems closely associated with “personal consumption” rather than as an indicator for the overall “health” of an economy.

So as late as the 1930s, the British Colonial Office did not have a coherent conception of “the economy” as we do today. This only emerged in the 1940s, after experts had constituted it as an object. Mitchell also identifies a number of other processes that contributed to the economy’s emergence. First, as imperial rule lost legitimacy, international actors began to think more and more in terms of states or nations as well defined, reductive entities. Economics followed suit, and defined itself in terms of the “study of an object defined by the borders of the nation-state.”

Finally, new tools to circulate and represent money were crucial. As technologies
and statistical representations made it easier to move and represent money abstractly, it became possible to measure and manage money in economic models. The breakthrough came in the 1930s when Keynes conceptualized “the new totality not as an aggregation of markets in different commodities, but as the circulation of money… the sum of all the moments at which money changed hands.” This conception resonated with metaphors of economies as “organisms” or “systems” that were autonomously bounded, separate from their environments.

The bounding of the economy as a separate sphere was then naturalized via the rise of statistics. The first major instance of national accounting was the Dawes commission’s attempt to estimate Germany’s ability to pay reparations to the allies. The methodological approach of the committee was to attempt to measure Germany’s wealth. This points back to the days when the wealth of a country was measured in mercantilist-substance discourses. The approach ran into difficulties because it was not clear how to define economic activity in quantitative terms. After Keynes’ breakthrough, the task became to measure easier: count income, not wealth. Income provided a better analog to “money changing hands.” In both the UK and the US economists set out to measure national income during the Second World War. These yielded the first representations of national income, the precursor to Gross Domestic Product.

Once the economy was constituted as a bounded and separable object it was possible to conceive of it as “growing” as a natural organism would. Methods of national accounting provided a means to measure this object and give it a more solid existence in

---

governmental life. Economic objectives could then be naturalized, to become taken-for-granted goals of society. The process of naturalizing economic growth continued throughout the early twentieth century. Older conceptions of linear progress as evolution toward civilization were not abandoned, but merely transposed onto the new concept of the economy. The narrative of progress made “economic growth” seem like a natural end of politics in the twentieth century. The key conceptual move in this transformation was forging connections or articulations between economic development and scientific and technological progress.

**Development as Scientific and Technological Progress**

One might be tempted to think that economic growth was merely a means to an end of things that are properly valued, like quality of life. While this perception likely motivated some people, there was also another set of concepts that bolstered developmentalism. Throughout the 20th century, experts forged links between the conception of development as a manipulable, man-made process to narratives of scientific and technological progress. At first, this goal was stated implicitly, as in F.D. Lugard’s seminal defense of colonialism in *The Dual Mandate* (1922):

Though we may at times entertain a lingering regret for the passing of the picturesque methods of the past, we must admit that the locomotive is a substantial improvement on head-borne transport, and the motor-van is more efficient than the camel. The advent of Europeans has brought the mind and methods of Europe to bear on the native of Africa for good or for ill, and the seclusion of ages must perforce give place to modern ideas. Material development is accompanied by education and progress.\(^{163}\)

In this argument, Lugard measures the pre-colonial life of Africans in two ways. First, he

---

\(^{163}\) Lugard 1929 [1922], 5.
measures it against the technological standards of Europe, which are presumed to be superior. Second, he measures it against the standard of “efficiency,” which itself is drawn from utilitarian scientific discourses. Together these standards lend credibility and solidity to the desirability of “material improvement.” In this way, scientific and technological concepts formed the implicit ends of colonial officials like Lugard.

However, by 1960, this goal was stated explicitly in W.W. Rostow’s *Stages of Growth*. There, Rostow defines a “traditional society” as one “whose structure is developed within limited production functions, based on pre-Newtonian science and technology, and on pre-Newtonian attitudes toward the physical world.”\(^{164}\) To reach take-off, societies must “exploit the fruits of modern science.”\(^{165}\) A country could reach the highest stage of development, “maturity,” when it “demonstrates that it has the technological and entrepreneurial skills to produce not everything, but anything that it chooses to produce.”\(^{166}\) Rostow’s text thus connects Smith and Lugard to the postcolonial mission of development.

Thus, a scientific and technological conceptualization of development slowly displaced the older “civilizational” conception that included a diverse group of artistic, religious, political, and scientific standards. In a similar trend the word ‘development’ itself shifts from referring simultaneously to political, social and economic change, to becoming equated with economic change alone. I want to suggest that this privileging of the economic is due to a tighter coupling between economic and scientific discourses. Take this suggestive passage from Lugard’s opus: “wonderful progress has been made

---

164 Rostow 1960, 4.
165 Rostow 1960, 6.
166 Rostow 1960, 10.
not only in the improvement of the quality of the material output, by scientific research, by organized method, and by expenditure of capital, but also in methods of administration for the welfare of the subject races.” In the narrative of the industrial revolution, scientific and economic progress go hand-in-hand, so it is no surprise that classical scientific ideologies entwine and conflate the two. As the authority of science increases, so too does the authority of economic imperatives and vice versa.

V. CONCLUSION: GROWTH AND DEVELOPMENT IN THE POSTWAR ERA

An alternative explanation of the rise of development discourse is that the British government hoped that these interventions would raise revenues, increase demand for British exports, and legitimate the colonial enterprise in an era of self-determination. On this view, expert knowledge for accelerated development is merely a means to state ends. There is some evidence for this explanation but it cannot explain either the origins of the development idea or the effects scientific thinking had on colonial goals and values. Between 1920 and 1950 a whole new way of thinking about progress was forged that instrumental explanations cannot account for.

The decline of scientific naturalism which had guided British colonial policy for 100 years gave way to a modernist developmentalism that depended on expertise to spur economic growth. The detribalization thesis had initially supported a policy of development along native lines, but this doctrine proved untenable in the face of dislocations in native society. The British Empire had to turn to development discourse for a vision of progress that would replace destroyed primitive societies with modern lifestyles.

---

167 Lugard 1929 [1922], 6.
The doctrine revealed universalist thinking: the problems of native societies were no longer seen as “tribal problems” distinct from those confronted by developed societies. Instead, these nations were represented as merely at a lower stage of development. They could achieve economic growth and Western progress under the trusteeship of more advanced nations with assistance from international organizations. The implicit goal for these societies was to be economic growth along Western lines. On the other hand, it was clear that Western theory had failed to predict and make sense of development in the colonies. This created a demand for a special brand of economics specifically attuned to the problems of developing countries. The result, development economics, would attempt to uncover the general determinants of economic progress defined as “economic growth.”

By constituting the objects of development – labor, land, nutrition, disease, education and the economy – experts had provided the necessary intellectual architecture for the redefinition of political ends and values. Classical scientific discourse now provided more than just the episteme and ontology in which ends and values were framed. Now modernist goals like economic development were linked to ideas of scientific and technological progress. These connections naturalized and thereby strengthened the idea of economic development as scientific and technological progress. In the terms of the generative structure of discourse, economic progress became a more powerful idea because of its links scientific and technological epistemes, ontologies, and ideologies. Namely, economic progress fit well with the universalist, ordered, quantitative, and rationalist concepts at the core of classical scientific discourse.

But British colonialism also spread these discourse to its dependencies and its allies.
While the story of exporting ideas to the colonies has been told, less emphasis has been put on how British ideas were influential on international organizations. British colonial ideas were important to the development of the Food and Agricultural Organization, the World Health Organization, and as noted above the World Bank. These institutions would in turn further disseminate ideas to the countries of the Global South, this time in the guise of “assistance” but still under the umbrella of “expertise” necessary for progress.

The history of development in the British Empire is a key event in the global history of development discourse. It is, of course, not the only significant forerunner. In the 1930s, the US experimented with development loans to Latin American countries. The underlying logic was rooted in the economic philosophy of the New Deal and the lessons of the depression: open trade and government planning could deliver economic progress.\(^{168}\) The US set up an Export-Import Bank and an economic advisory committee that aimed to promote its economic ideas. It considered establishing a multilateral “Inter-American Bank” with a board of national government representatives. While this plan never materialized, it served as a precursor to the Bretton Woods institutions.\(^{169}\) These US experiences were combined with British Colonial policy in the constitution of the post-war economic order. This order enshrined the principle of development as the central goal of all states.

\(^{169}\) Helleiner 2006, 950-57.
REFERENCES

Primary Documents

Archival Documents

All cited documents from the Foreign Office (1860-1900) are reprinted in Foreign Office Confidential Print series. I read all the documents relevant to West Africa for the relevant period in two volumes:


All cited documents from the Colonial Office are reprinted in the British Documents on the End of Empire series. I read all the documents relevant to African colonial policy in two volumes therein:


These documents are usually referenced by their Colonial Office archive numbers (I list them here with their British Documents on the End of Empire descriptions):

CO 138/459/2, no 67. “[Education in the West Indies]: despatch from Sir F Stockdale (Barbados) to Mr Stanley explaining the financial implications of implementing in full the recommendations on education made by the Moyne Commission.” 26 Aug 1943.


CO 323/1071/13, no 2a. “[Labour policy]: circular despatch from Lord Passfield to colonial governments calling for the elimination of penal sanctions in labour contracts and requesting review of labour conditions.” 6 Aug 1930.


CO 554/74/4, no 1. “[Education]: letter from H Vischer to Sir S Wilson comparing British and French educational policies in West Africa. Minute by J E W Flood.” 18 June 1926.

CO 554/121/2, no 17. “[Higher Education in Africa]: report of the proceedings of the first West African Governors’ Conference held at Lagos, 10-18 Aug 1939; item 5 ‘Higher education in British West Africa’.” Aug 1939.


CO 822/83/11, no 1. “[Higher education in Africa]: letter from J E W Flood to the Treasury stating the case for a UK contribution to an endowment fund for Makerere College.” 6 Dec 1937.


CO 847/16/9, no 2. “[Medical policy]: minutes of a meeting of the Colonial Advisory Medical Committee on issues raised in Lord Hailey’s African Survey.” 18 April 1939.

CO 847/25/7, no 1. “‘Factors affecting native administration policy’: memorandum by G B Cartland.” Jan 1946.

CO 847/35/6, no 2. ‘Native administration policy: notes for further discussion’: memorandum by A B Cohen.” 3 Apr 1946.


CO 852/214/13, no 1. “[Colonial Development]: despatch from Sir B Bourdillon to Mr MacDonald, criticising colonial development policy and requesting more financial assistance for Nigerian development.” 5 April 1939.

CO 852/369/3, no 50. “[Industrial development in the colonies]: CO note of a departmental meeting with Sir H Moore.”

CO 852/482/6, no 11. “[Wartime colonial development and welfare expenditure, and restriction of non-essential consumption in the colonies]: circular despatch from Lord Moyne to colonial governments.” 5 June 1941.

CO 859/19/18, nos 1 & 2. “[Colonial development and welfare]: letter from Mr MacDonald to Sir J Simon. Enclosure: ‘Colonial development, note for the Chancellor of the Exchequer’.” 11 Oct 1939.

CO 859/45/2, no 1. “‘Some observations on the development of higher education in the colonies’: memorandum by Professor H J Channon.” Jan 1941.

CO 859/45/3, no 15. “[Higher education]: circular letter from Mr Stanley to the vice chancellors of universities in Britain inviting co-operation with a proposed commission of inquiry on higher education in the colonies.” 29 May 1943.

CO 859/65/8, no 14. “[Medical policy]: summary by CO Social Services Department of Medical Policy in the Colonial Empire: Memorandum submitted to the Secretary of State for the Colonies by the Colonial Advisory Medical Committee, 19th May 1942 (CO, Misc No 505, Jan 1943). Minutes by G L M Clauson, K W Baxter and S Caine.” July-Aug 1943.


CO 950/1. “[Social and economic conditions in the West Indies]: memorandum by the CO West Indian Department for the Moyne Commission.” 20 May 1938.

T 236/4090. “[Colonial currency reserves]: letter from S Caine to Lord Keynes.” 14 May 1943.

All documents from the Cabinet Papers are from the British National Archives online database. I selected 10 documents manually based on secondary texts and 10 documents randomly from the 147 documents that met a search for “colonial development” for the period 1910-1950. Those cited are here:

CAB 24/158. Secretary of State for the Colonies and the President of the Board of Trade. “Proposals for Financial Assistance to Accelerate the Development of Imperial Resources.” 1923.

Monographs

Monographs were selected based on what was deemed significant in the secondary literature.¹⁷⁰


Secondary Literature


¹⁷⁰ I plan to complement this selection with a random selection of 3x more pages than those read here.


Chapter 5

The Growth Imperative

“We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas . . . The old imperialism – exploitation for foreign profit – has no place in our plans. What we envisage is a program of development based on concepts of democratic fair dealing . . . Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge.”

– Harry Truman

I. INTRODUCTION: THE RISE OF ECONOMIC GROWTH

The end of imperialism and the success of the decolonization movement brought hope and optimism to the people of the Global South. Freedom and progress could now be directed by their own efforts and values. In this hopeful atmosphere social scientists worked to transform the doctrines and discourses of late economic imperialism into a “decolonized” theory of development. Modernization theorists in the West described a universal model of economic and social progress along British and American lines in scientific terms. Soviet experts offered a Marxist developmentalist narrative grounded in the technological determinism of Marxist thought. For all their differences, both ideological systems promoted a vision of scientific modernity as the goal for all societies. The institutions of international society played a key role in disseminating and naturalizing

1 From his 1949 Inaugural Address. Quoted in McCarthy 2007, 4.
these ideas. International organizations like the World Bank, the Food and Agricultural Organization, and the World Health Organization picked up where the British and other European empires left off. John Boyd Orr, for example, who had worked on British food policy in the 1920s lead the Food and Agricultural Organization in the 1940s. Social scientists laid the foundation for the proliferation of scientific ideas by institutionalizing expertise in international organizations. The formation of expert-led organizations created autonomous sites for the reproduction of scientific discourse at the international level. Today, these organizations are powerful actors in global public policy discourses that influence domestic politics all over the world. While Meyer and his colleagues have pointed this dynamic out, many interesting problems and puzzles remain.\(^2\) How and why do international organizations promote scientific and technological progress? Why do they take it for granted that modernist, Western goals should be exported to all countries in the world?

In the World Bank, modernist aims were promoted throughout the 1980s and 1990s despite efforts to the contrary. In the 1970s, World Bank President Robert McNamara set out to refocus the organization on poverty alleviation. He thought that the Bank had been dominated by economic growth oriented policies and wanted to ensure that the institution was helping the very poor. His efforts succeeded in putting poverty alleviation on the Bank’s agenda in the 1970s. However, in the 1980s, the Bank set aside the concern with poverty and growth policies dominated. Despite the efforts of civil society organizations and dissenters within the Bank, economic growth continued to dominate

\(^2\) Meyer et al 1997; Drori et al 2003. Just as the rationalist-functionalist argument put change in a black box in Chapter 3, Meyer et al’s ideational-functionalist arguments puts institutional change and the spread of scientific ideas in a black box. They have impressively documented the rise of scientific ideas, but have not shown clearly the mechanisms that explain this rise.
policy initiatives throughout the 1990s. Why did the idea that all states should pursue unending economic growth in the Bank become dominant? Why did the World Bank promote modernist goals despite McNamara’s efforts?

On one hand, it seems natural that an organization charged with alleviating poverty the world over would attempt to raise the national income of all states in the hopes that this will in turn raise the incomes of the poor. Certainly all things being equal, economic growth alleviates poverty. However, economic growth does not reliably alleviate poverty. Take for example two similar periods of global growth: from 1988 to 1993 the global economy grew 5.3% and from 1993 to 1998 the global economy grew 4.8%.³

![Figure 5.1. Diverging trends in real income growth.](image)

Figure 5.1 shows, however, that whereas income growth in the period 1993-98 raised the

³ Milanovic 2005, 111.
⁴ Milanovic 2005, 111.
incomes of most poor and middle class people, growth in the period 1988-93 primarily raised the incomes of the richest. Therefore, the relationship between growth and poverty alleviation is elastic. If growth does not reliably raise incomes of the poor, then it is not clear that economic growth serves as a means to the ends of poverty alleviation. The Bank might have more effectively achieved poverty alleviation in the 1980s and 1990s via direct, targeted programs at the village or community level.\(^5\) In fact, this is precisely the possibility McNamara raised. He argued that the Bank should not be fixated upon growth for growth’s sake and should design targeted projects to improve the well-being of the worst off alongside growth oriented strategies.

My argument is that the dominance of economic growth was bolstered and naturalized by the rise of economic scientific discourse in the Bank. Indeed, McNamara himself insisted that the Bank should employ scientific knowledge and quantified tools to achieve the twin objectives of poverty alleviation and economic growth. However, by introducing scientific discourse McNamara unintentionally changed the discourse of the Bank such that it became difficult to represent and measure poverty alleviation. Instead, the macroeconomic representations privileged quantifiable growth-oriented policies. Over time, growth came to be taken-for-granted and valued as scientific and technological progress. In short, scientific means constrained and transformed World Bank ends.

This means-ends change had real consequences on the well-being of individuals the world over. For decades, the Bank diverted attention from poverty alleviation as it focused its efforts on restoring economic growth and macroeconomic health. Poverty

\(^5\) It is a matter of some debate precisely how elastic the relationship is, and precisely which variables best explain the discrepancy. Cf. Deaton 2001.
stricken people did not get the help they needed because scientific tools naturalized a
growth oriented strategy and made it difficult for the Bank to reconsider the effects of its
policies on real individuals and communities. Understanding how classical scientific
representations contributed to this is an urgent critical task.

This case study also helps explain why some international organizations were colo-
nized by scientific ideas but others were not. In the two previous chapters I have ex-
plored the rise of scientific ideas without a concern to explaining variation. In this chap-
ter and the next I try to explore why some organizations incorporate and naturalize sci-
entific discourses while others do not. This chapter addresses these questions with a de-
tailed case study of economic expertise and economic growth in the World Bank. In the
next chapter, I compare the outcomes here to the outcomes in UN peace operations to
get some variation on the degree to which international organizations are transformed
by scientific discourses. This task will help us to understand where classical scientific
discourse and its attendant pathologies may travel next.

II. BEFORE SCIENCE: WORLD BANK DISCOURSE 1950-1970

What was World Bank discourse like before McNamara brought in classical scientific
discourse? In order to establish the effects of economists and scientific discourse on the
Bank, we must examine the means and ends of the Bank. In this section, I argue that in
the 1950s and 1960s, the discourse of the Bank employed a relatively informal naturalist
ontology and epistemology to achieve development conceived as “modernization.” In
1968, McNamara entered and set into motion a series of reforms that would transform
both the means and ends of the Bank.
Scientific Discourse in the Post-War Era

The events of the Second World War attested to the awesome power of science and technology in human life. The Manhattan project demonstrated that scientific knowledge would transform military and political affairs. Its extraordinary success bolstered the authority of science in the postwar era.

Scientists claimed that the destructive potential of the atomic bomb proved that scientific knowledge was too dangerous to be left in the hands of the politicians. Niels Bohr argued that an international organization of scientists should be created to facilitate cooperation amongst the nuclear powers: “only by creating an “open world,” an international order based on the kinds of cooperation that existed in the scientific profession, could an arms race and a nuclear war be circumvented.” Members of the Manhattan project concluded that there should be an international agency of scientists with “police powers.” Vannevar Bush and James Conant, both of whom served as advisors to President Roosevelt during the war, argued for a similar system:

Sovereignty would be replaced by an association in which an international community of scientists would play a major role; such an arrangement was thinkable in 1944-45 because the colossal benefits and enormous dangers conferred on civilization by science seemed so apparent.

While these utopian visions of scientific hegemony may strike us now as naïvely insensitive to considerations of power politics and the tendency of political leaders to jealously guard national sovereignty, they nonetheless speak to the widespread authority of sci-

---

6 Manzione 2000, 29.
7 Manzione 2000, 29.
8 Manzione 2000, 30.
The authority of physics encouraged many social scientists to take up classical scientific discourse. In particular, economics was deeply influenced by the physics model. In part, this was due to the close association between economics and physics. During the Second World War and into the early days of the Cold War, American economists were deployed alongside physicists and engineers conducting “Operations Research” for the government.\textsuperscript{9} Operations Research relied on the idea that human behavior could be modeled and predicted just like machine behavior.\textsuperscript{10} As Mirowski puts it, Operations Research helped to make neoclassical economics more epistemically universalistic and ontologically reductive by exposing economists to ideas from the natural sciences: “neoclassical economics became more formal, more abstract, more mathematical, more fascinated with issues of algorithmic rationality and statistical inference, and less concerned with the fine points of collective action or institutional specificity.”\textsuperscript{11} In interdisciplinary environments where economists and scientists worked together, as they did at RAND, economists came to see their task as a form of “social engineering.”\textsuperscript{12} These developments helped change economics from a pluralist discipline in which neoclassical theorists worked alongside institutionalists and historically-inspired theorists toward one dominated by neoclassical orthodoxy.\textsuperscript{13}

In the atomic age the abstract analysis of neoclassical economics had great authority. Paul Samuelson provided a mathematical method for Keynesian analysis that met

standards of scientific rigor which could be used to defend its policies, while ‘radical’
economists were denounced on technical grounds.\textsuperscript{14} His General Equilibrium Analysis
underwrote the Keynesian consensus that dominated post-war policy making between

The rise of game theory can also be traced to the authority of classical scientific dis-
course during the Cold War. A mathematical, methodologically individualist economic
science offered an objective basis for American Cold War ideologies that promoted indi-
vidualism and technological progress.\textsuperscript{15} These two strands created a formal, mathemati-
cal, and abstract economics discipline in the 1960s and 1970s. It is this model that enters
and changes goals in the Bank during the 1970s.

In Political Science and Sociology, Modernization theory exhibited fewer features of
classical scientific discourse, but was still shaped by rationalist epistemes that infused
the optimism of the age. Gilman argues that these theorists saw their project as the pro-
motion of “a form of social and political practice in which history, society, economy, cul-
ture, and nature itself were all to be the object of technical transformation.”\textsuperscript{16} American
social scientists believed and promoted Enlightenment values: “the power of science, the
importance of control, and the possibility of achieving progress through application of
human will and instrumental reason.”\textsuperscript{17} Their optimism was in part a celebration of the
success of the United States, which had emerged from the war as the most powerful and
prosperous country the world had ever seen. They held American society up as the

\textsuperscript{14} Backhouse 2010, 49-58.
\textsuperscript{15} Amadae 2003.
\textsuperscript{16} Gilman 2003, 7.
\textsuperscript{17} Gilman 2003, 7-8.
model for the entire world.\textsuperscript{18} Thus, the success of scientific and technological change was connected to a vision of cultural convergence in which the diversity of “traditional” societies would transform into the unity of modernity.\textsuperscript{19}

Both of these traditions filtered into and influenced the World Bank. As we shall see, at first Modernization theory would dominate, before the rise of neoclassical macroeconomics models would serve to modernize and naturalize the ends of economic growth.\textsuperscript{20}


The World Bank was originally established to lend money to European countries for reconstruction efforts as part of the postwar settlement. However, it soon found itself rendered obsolete by Marshall plan lending and sought out new clients in the global south. Bankers and engineers ran the early Bank and they believed capital could be productively and profitably lent to “developing countries” emerging from the oppressive rule of colonialism.

These bankers and engineers employed the technical and managerial means of their professions, without help from outside economic expertise. The primary criterion of granting loans was whether a country was deemed “creditworthy.” This criterion drives home the point that the World Bank was in the end a bank, more interested a rate of return than ‘charity.’ To this end, projects are to “contribute directly to a productive capac-

\textsuperscript{18} Gilman 2003, 15.
\textsuperscript{19} Gilman 2003, 100. Despite this classical scientific impetus, Modernization theory had a complex intellectual heritage that did not reduce social reality to mathematical simplicity and made room for values and cultural change. One central Modernization document states that “the most basic economic change required is psychological. Men must cease to regard the physical world as fixed. They must learn that it is capable of being understood and manipulated in terms of stable and logical rules which men can master.” (Gilman 2003, 183).
\textsuperscript{20} For more details on the underlying economic theories of the Bank see Stern and Ferreira 1997.
ity and normally does not finance community projects of a primarily social character.”

Loans were to be made on a “sound business basis” rooted in “objective economic appraisal.” These objective appraisals were not to be determined by rigorous science but “an exercise in judgment.” This is because creditworthiness is in part determined by an “intangible factor of the country’s attitude… willingness to maintain debt service at the expense, if necessary, of sacrifices in consumption standards.” Thus, “the situation in every country must be considered on its own merits.”

The ontology of the Bank emphasizes natural resources, productive capacity, and government effectiveness. Reports in this era often begin with an account of the geography, topography and climate, population, history, politics, and debt levels. Take for example the report excerpted in figure 5.2, which begins with an informal discussion of the geography, topography and climate of Brazil. This is indicative of what I call a “naturalist” ontology, which though scientific in some sense, does not really exhibit the characteristics of classical scientific discourse.

---

21 World Bank 1957, 43.
22 World Bank 1957, 38.
23 World Bank 1957, 38.
24 World Bank 1957, 39.
In general, the analysis offered in these reports is informal and qualitative, although figures and percentages are used when it makes sense to.\textsuperscript{26} This informal analysis made room for discussions of values. One report argues that agricultural life in Lebanon suffers from underemployment which can be rectified by jobs programs in the cities and imbuing the people with “modern cultural aspirations.”\textsuperscript{27} The report is confident that the latter can be done because the “country is open to a free flow of spiritual and cultural values from the more dynamic west.”\textsuperscript{28} Statements like these simply are not made after 1960, when geographical and topographical reports are dropped and replaced with a standard menu of statistical “Basic Data” on area, population, GDP, GDP per capita, ex-

\textsuperscript{26} World Bank 1948; 1953; 1955.
\textsuperscript{27} World Bank 1953, 3.
\textsuperscript{28} World Bank 1953, 2.
ports, imports, government expenditures, government revenues, and debt.29

The goals of the Bank at this time are vaguely defined and various but can be described under the title of “development-as-modernization.” Modernization theory dominated development discourse at the time. It argued that external capital investment could push less developed countries along a pre-defined and universal path from “traditional” agricultural society to “modern” industrial civilization.30 W.W. Rostow famously argued that these capital injections could fuel a “take-off” which would thrust an economy through the “stages-of-growth.”31 The Bank, it was argued, could spur Modernization by lending to poor countries.

The modernization backdrop is rarely explicitly mentioned in the Bank. The terms ‘modern’ and ‘modernizing’ do not appear much, but the projects and their justifications reveal an implicit modernization theory at work: predominantly agricultural societies must build infrastructure to spur industrialization.32 The stated aims of the Bank are to expand production. A 1957 statement of policy clearly stated that the central goal of the organization was, quoting the articles of agreement signed in Bretton Woods, “the expansion by appropriate international and domestic measures, of production, employment, and the exchange and consumption of goods which are the material foundations of the liberty and welfare of all people.”33 In project reports this tendency to further to “development” conceived as expansion and industrialization is even more pronounced.

29 World Bank 1963.
30 Hürni 1980, 14.
31 Rostow 1990 [1960].
33 World Bank 1957, 3.
Projects are often linked to the 5- and 10-year plans of national governments. A proposed agricultural loan to Pakistan was necessary because agricultural “progress is vital to achieving the growth rates postulated in the Third Plan.”

Projects often focused on removing the barriers to Rostowian take-off. A loan to India for a thermal power plant was justified because “the economic development of Andhra Pradesh… has been handicapped by a severe shortage of power.” A loan to the Belgian colonial government in the Congo aimed to “expand production, raise the standard of living and increase exports… to remove the chief limitations on economic development of the Congo.” These projects are often linked to the 5- and 10-year plans of national governments. A proposed agricultural loan to Pakistan was necessary because agricultural “progress is vital to achieving the growth rates postulated in the Third Plan.”

The modernist backdrop is especially evident in passages where the contrast between rural and urban is mapped onto that between ‘backwardness’ and an industrial modernity: “Brazil is a country with a low standard of living, with striking contrasts between rural and urban life, and between backward inefficient methods of production and up-to-date industrial techniques.” The same report encourages the exploitation of natural resources for “development” on the “fascist, Nazi, and Soviet example.” The implicit telos of modernity is to be realized by the injection of capital and technocratic

---

34 World Bank 1951, 4-5; World Bank 1965c, 3.
35 World Bank 1965c, 3.
36 World Bank 1965b, 3.
37 World Bank 1951, 4-5.
38 World Bank 1951, 4-5; World Bank 1965c, 3.
39 World Bank 1965c, 3.
40 World Bank 1948 §II.1.
41 World Bank 1948 §1.1a-b.
management on the authoritarian model. This would allow Brazil to conquer nature and thus more effectively exploit its natural resources: “Large expanses of apparently fertile land remain to be cleared her forest resources are tremendous, she is rich in many minerals and in water power and her people are quick to learn.”

In short, the modernization model dominated and analysts implicitly believed that capital investment in infrastructure would spur an automatic and universal process of development was dominant. This is evident in Bank lending patterns in its first ten years. Over fifty percent of its lending was funding electricity and transportation infrastructure projects.

<table>
<thead>
<tr>
<th>World Bank Disbursements, 1947-1957</th>
<th>Disbursements ($USm)</th>
<th>% of Disbursements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Power</td>
<td>$886</td>
<td>30%</td>
</tr>
<tr>
<td>Transportation</td>
<td>$685</td>
<td>23%</td>
</tr>
<tr>
<td>Reconstruction Loans</td>
<td>$497</td>
<td>17%</td>
</tr>
<tr>
<td>Industrial Projects</td>
<td>$379</td>
<td>13%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>$278</td>
<td>10%</td>
</tr>
<tr>
<td>General Development</td>
<td>$140</td>
<td>5%</td>
</tr>
<tr>
<td>Communications</td>
<td>$26</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Total Bank Disbursements</td>
<td>$2922m</td>
<td>~99</td>
</tr>
</tbody>
</table>

_table 5.1. World Bank Spending by Category, 1947-57^43_

One caveat to this modernism can be seen in one of the quotes above. Development is supposed to underlie the “liberty and welfare of all.” This shows that economic de-

---

^42 World Bank 1948, §1.1. The gendered language here points to the themes raised by Carolyn Merchant (1980) in her seminal work on feminism and the environment.

^43 World Bank 1957, 66.

^44 World Bank 1957, 3.
velopment is sometimes posed as, in the greater scheme of things, a means to some other end, however vaguely defined. The general impression of this era however is one in which relatively informal analysis allows a variety of projects and theories to co-exists, provided that the projects appear creditworthy.


In the 1950s and 1960s the World Bank pursued a vaguely defined ‘development’ without significant economic or formal research.\(^45\) In the 1970s things changed on both counts: Robert S. McNamara was appointed President of the Bank in 1968 and immediately set out to both question and clarify the goals of development and to incorporate scientific techniques and research into Bank policy. This introduces the first stage of institutionalization, in which new rules and polices are created. Bureaucratic politics helps us understand why McNamara was an effective President. He gave clear commands, centralized control, changed personnel and ensured that the organization had adequate resources to change. However, as we shall see, McNamara also created unintended consequences.

McNamara aimed to put economic growth and poverty alleviation on equal footing. On his view, modernization theory had put too much emphasis on growth at the expense of social objectives rooted in improving the lives of the poor’s. In the first World Development Report (WDR), which would become the flagship publication of the Bank, McNamara argued that economic growth and direct poverty alleviation should be the “twin objectives of development” since only when these two come together will the real

\(^{45}\) Stern and Ferreira 1997, 534.
problem be addressed. McNamara defined the problem as “[a]bsolute poverty: a condition of life characterized by malnutrition, illiteracy, disease, squalid surroundings, high infant mortality, and low life expectancy as to be beneath any reasonable definition of human decency.” 46 However, this focus on poverty need not, in McNamara’s view, detract from economic growth. McNamara’s vision — to put poverty alleviation on equal footing with growth — was an uphill battle, but one that was assisted by changes in the external environment. In economics, new studies suggested that growth did not always translate into improvements in living standards, and that sometimes it was reasonable to sacrifice growth for higher employment. 47 The environmental movement challenged the idea that the world could support infinite growth and authors like E.F. Schumacher argued that “small is beautiful.” 48 Moreover, the 1970s were a time of general cultural pessimism in which the faith in science and technology waned. 49 Thus it is no surprise that the modernism of the Bank was tempered too:

As the high tide of modernism ebbed, development agencies in the 1970s pronounced much more modest proposals than they had a decade earlier. The World Bank’s reorientation away from grandiose infrastructure projects and toward “Basic Needs” typified this shift in emphasis. After the early 1970s, it would become hard to find development literature that claimed to be either providing or based on a master development blueprint. 50

This broader context provided McNamara with a supportive backdrop for his initiative.

McNamara aimed to reinvigorate poverty alleviation by introducing scientific means into the Bank. McNamara had an undergraduate degree in economics and loved quanti-

46 World Bank 1978a, iii.
49 Gilman 2003, 243-49.
50 Gilman 2003, 256-57.
tative data and cost-benefit analysis.\textsuperscript{51} He believed strongly in the authority of science and believed in its power to achieve his “twin objectives” of poverty alleviation and economic growth. McNamara did three things to change the means of the Bank. First, he reformed the Bank to increase his ability to monitor and guide outcomes. The Programming and Budgeting Department was established in 1968 to implement “scientific management” practices at the Bank.\textsuperscript{52} This centralization allowed him to effectively implement his policies. Second, McNamara instructed his staff to employ quantitative techniques in both traditional and social projects:

Reluctant staff were not allowed to apply a double-standard — using ‘precise’ figures when they referred to expected output effects and vague estimates when claiming ‘poverty reduction.’ Despite much grumbling, statements about poverty impact were required to be backed up by statistics, and staff had to scurry to find or create data on income distribution and on the number and living standards of project beneficiaries.\textsuperscript{53}

The first major review of policies and operations under his leadership argues that “it is possible to quantify project costs and benefits.”\textsuperscript{54} Finally, McNamara hired large numbers of economists. Under McNamara and his successor A.W. Clausen, the number of economists increased. By the 1990s, the ratio of economists to other types of specialists was 10 to 1 and non-economists complained that their ideas had to be translated into quantifiable, cost-benefit terms in order to be taken seriously.\textsuperscript{55} In short, McNamara put his faith in scientific methods of both management and analysis: “By reducing multiple, complex, individual decisions and transactions to summary statistics, McNamara sought

\textsuperscript{51} Kraske et al 1996, 163-4.
\textsuperscript{52} Kapur, Lewis, and Webb 1997, 245.
\textsuperscript{54} World Bank 1974a, 48.
\textsuperscript{55} Kardam 1993, 1777; Bebbington et al 2004, 44-47; Weaver 2008, 77-78.
to make the institution more transparent and subject to control.”

What were the effects of these reforms on the Bank?

My argument is that economists introduced representational constraints that contributed to the naturalization of growth-oriented policies. Moreover, they used the scientific authority of their discipline to delegitimize heterodox approaches and alternative problem-solving models. This had the unintended effect of hurting McNamara’s pro-poverty initiatives. First, former employees reported that McNamara faced resistance because “[t]he staff did not really believe in the poverty thesis.”

They believed growth was delivering results and would continue to do so. Moreover, the professional norms of economists in the Bank made them uncomfortable with McNamara’s normative approach. As one observer put it, “[s]taff members were embarrassed by McNamara’s emotional lectures on poverty.” Second, economists used their clout in intra-Bank debates to prevent poverty from becoming a core goal of the organization. For example, in the 1970s there was an important debate within the Bank about whether or not to move away from the financial cost-benefit analysis approach of the 1950s and 1960s to a “social” cost-benefit approach. In social cost-benefit calculations, the value of a project is determined not solely by its financial rate of return, but also by the value of its social contributions, to health, clean water and so on. These welfare benefits are calculated on the basis of “efficiency prices” or “shadow prices” that rely on complex assumptions and mathematics.

Throughout the 1970s and early 1980s economists within the Bank

60 Hüni 1980, 69.
tried to develop a standard method of social cost-benefit analysis that would meet McNamara’s standards of quantification all the while allowing staff to quantify the benefits of poverty alleviation projects for small communities and villages in the developing world. The method, however, ran into “technical difficulties.”61 The mathematics was complex and the necessary assumptions were derided as subjective. As one observer from within the Bank put it, “[e]ven those who developed the shadow-pricing method into a sophisticated tool for project appraisal admit its many shortcomings, its inevitable approximations, and its imprecisions.”62 Moreover, experiments in the field proved “too complicated” and the effort to mainstream social cost-benefit was abandoned.63 As a result, “poverty,” when it was taken into consideration, was defined in terms of “income,” rather than in terms of “basic needs” or other concepts which proved harder to quantify. In a World Bank manual on project analysis, economist Deepak Lal defines the “problem of poverty” as “raising the incomes of large numbers of people who are below some national poverty line.”64

In this case, standards of “objectivity” were used to deride and block the operationalizing social cost-benefit analysis which could not meet those standards. The discourse that established the boundaries of “scientific methods” inside the Bank excluded the imprecise methods of social cost-benefit-analysis. The representational constraints of economic analyses, combined with their scientific authority and the delegitimization of “non-scientific” practices, made it difficult to translate poverty alleviation into scientific discourse within the Bank. Instead, as we shall see, analysts turned to easily quantifiable

---

64 Lal 1974.
goals like potential contributions to GDP growth. By importing economists and their increasingly neoclassical scientific concepts, McNamara introduced representational constraints and set off institutionalization processes that undermined basic needs and poverty alleviation approaches. He unwittingly supported arguments and initiatives that marginalized anthropologists and other ‘unscientific’ perspectives or methods such as social cost-benefit analysis. McNamara unwittingly created a quantitative and modernist culture within the Bank that made it difficult to see and appraise alternatives to growth as valuable.


In this section, I show that McNamara’s reforms set off processes of unintended discursive change in the long run. First, the means of the Bank took on the abstract, ordered, and quantitative features of neoclassical economics discourse. Second, the rise of classical scientific discourse generated pressure on ends to become more ordered, calculable, and modernist. Whereas previously poverty alleviation and growth coexisted, in the 1980s, growth came to dominate. In this section, I begin before the rise of the economists to show the discursive changes that naturalized growth.

McNamara’s Early Years: Bank Discourse, 1968-1972

Despite the higher profile of poverty in McNamara’s speeches and other public documents, the project documents between 1968 and 1972 continue to exhibit features from of Modernization theory. The 1968 policies and operations manual states that the pur-

---

65 Kardam 1993, 1777; Bebbington et al 2004, 44-47; Weaver 2008, 77-78.
pose of the Bank is the “promotion of economic development... [and] increase the output of useful goods and services and to raise standards of living.” Elsewhere this is operationalized as “strengthening the economy” or expanding “productive capacity or output.” A 1968 report on the Chilean economy is oriented explicitly to “gross domestic product.” These are complemented by statements about meeting increased demand that reveal an implicit modernization perspective similar to that in the 1950s and early 1960s. A report on Indian agriculture aims to “increase fertilizer use and to build an indigenous industry to supply the increasing requirements.” A loan to Guatemala for a telecommunications project is premised on “alleviating congestion and delays in the national long-distance traffic.” The 1972 Tanzanian country report posits a “development strategy” that will increase power distribution, attract foreign capital via tourism, and meet rising demand for urban housing with building projects.

The Bank was slow to develop new poverty alleviation policies. It was not until after 1973 that McNamara was truly able to roll out programs and analyses that addressed poverty directly. The focus on poverty does not, in McNamara’s view, point us away from economic growth. Instead, McNamara feared that “unless economic growth in the developing countries can be substantially accelerated” population growth will wipe out the gains of growth and leave unacceptably high numbers of absolute poor. A concern with GDP growth is then complemented by a new, more multidimensional ideal of

---

66 World Bank 1968a, 1.  
67 World Bank 1968a, 44.  
68 World Bank 1968b, iv.  
69 World Bank 1969b, 1.  
70 World Bank 1971, 4.  
71 World Bank 1972, 3-23.  
73 World Bank 1978, iii.
“progress”: “rise in income per person... expansion of education systems, growing literacy, improvements in nutrition and health conditions, increasing technological sophistication and structural changes, including a growing industrial base and greater urbanization.” The 1980 World Development Report repeats this refrain. It argues that “[g]rowth is vital to poverty reduction, but it is not enough.”74 This report introduces the “human development” theme into Bank discourse suggesting that “education and training, better health and nutrition, and fertility reduction” are central to alleviating poverty, increasing incomes, and GNP growth more generally.75 It is striking that it takes until 1978 for explicit definitions of poverty and indicators of its alleviation to enter the core of World Bank discourse. This speaks to the power of modernization theory’s hold on Bank discourse.

The evidence of his influence can be seen in “social” projects like a water development initiative in Guayaquil, Ecuador. The project documents reveal not only the increase in explicitly social projects, but also McNamara’s requirement for precise quantification of costs and benefits. A 1974 appraisal for a project in Ecuador clearly specifies that it aims to “increase water supply services from 50% to 80% of the population of Guayaquil.”76 This kind of precision is new in project appraisals, but it also shows that more precise indicators were not necessarily “social.” Moreover, some analysts have criticized this precision as being more or less illusory, since it is not really possible to quantify the number of people affected by a project.77

74 World Bank 1980a, iii.
75 World Bank 1980a, iii.
76 World Bank 1974b, 1.
77 Hürni 1980, 119.
By the mid-1970s, McNamara’s reforms began to have profound effects on the Bank, but not the ones he had hoped for. His reforms imported new ontologies and economists with representational constraints that made it difficult to represent poverty. Whereas poverty became illegible, macroeconomic, growth-oriented indicators became increasingly legible. There were economists in the Bank in the 1950s and 1960s, and their influence can be seen. A report on the Argentinian economic provides a more complex analysis than those seen in the 1950s. Whereas in the 1950s it was assumed that the mere injection of capital would push states through the stages of growth, here the prescriptions are more complex. Passages like this would be particularly out of place a decade earlier:

“Several explanations of the tendency toward stagnation of output... have been offered. The one most widely discussed and held is that concentrated land holdings give owners more than enough personal income... so that they have little incentive to intensify.”

Thus, “capital accumulation” in the agricultural sector depends on changing the incentive structures of these farmers. Such statements are accompanied by an increased use of scientific metaphors common in economics discourse such as “volume,” “degrees,” and “output.” The report also engages in “scenario analysis” in which the effects of policies are analyzed with quantitative precision. The wide variety of scientific metaphors employed in this economic report is striking. It should not surprise us, then, that this discourse is easily linked to the goal of “economic growth,” which has an affinity with sci-
entific metaphors, rather than linked to incomes or standards of living.\textsuperscript{81}

However, in the 1960s, analyses like this are the exception rather than the rule.

Starting in the mid-1970s the switch to a macroeconomic perspective is striking. On the public level, McNamara argued that the Bank was going micro, “providing increased inputs of use to the individual farmer” and targeting the poor in direct poverty alleviation campaigns.\textsuperscript{82} But beneath this, the episteme shifted toward the neoclassical, macroeconomic perspective of economics. The 1974 Policies and Operations manual argues that, “to be able to help countries in all phases of their development, the Bank has to know and understand the economies of its member countries… [it must] obtain a comprehensive picture.”\textsuperscript{83} The report recounts how country analysis has been standardized, as economic data on any country must include “national accounts data; socioeconomic data indicators; commodity (production, export, import, and price) information; and general capital flows and debt statistics.”\textsuperscript{84} This common template “permits inter-country comparisons, and provides a ‘global framework’ of projections.”\textsuperscript{85} Here a universalist, one-size-fits-all episteme has entered, replacing the different approaches for different countries perspective of the 1950s. This macroeconomic perspective easily lends itself to supporting modernist goals like economic growth; by introducing representational constraints that encouraged Bank staffers to see an economy in general, macro terms, these methods naturalize macro goals, like growth, and standardized policy packages, like Structural Adjustment.

\textsuperscript{81} World Bank 1965d, i.
\textsuperscript{82} World Bank 1974a, 9.
\textsuperscript{83} World Bank 1974a, 42.
\textsuperscript{84} World Bank 1974a, 70.
\textsuperscript{85} World Bank 1974a, 70.
Three reports clearly demonstrate the representational constraints in Bank discourse. The 1980 *WDR* seems at first to combine a concern for poverty with a macroeconomic analysis meant to help developing countries “adjust” to new global economic realities. In his preface, McNamara notes that this should not come at the expense of the living standards of the poor. But after the opening pages these social goals disappear, in favor of an analysis of how to raise GNP via structural adjustment policies. GNP is favored because it can be modeled and statistically represented in “illustrative projections.” After all, “[i]t is difficult to measure the extent of poverty” because the “data are inadequate” due to incomplete household surveys. This demonstrates the constraints of scientific discourse in action: even though actors want to achieve poverty alleviation, the model in-and-of-itself constrains the Bank to the analysis and promotion of growth because precise tools to further poverty alleviation do not exist.

The preface of a 1981 report on development in Sub-Saharan Africa states that the goal of its prescriptions is to “raise the living standards... reverse the stagnation and possible decline of per capita incomes which are projected for the 1980s.” But the body of the report “focuses on how growth can be accelerated and how the resources to achieve the longer-term objectives set by Africa governments can be generated.” Here, “social and development goals” are relegated to the margins, as ‘longer-term objectives’ the countries can attend to on their own. The main argument of the report is that “[a]
reordering of postindependence priorities is essential if economic growth is to accelerate”; African governments must rely on the private sector and reduce “the widespread administrative overcommitment of the public sector."93 This will help countries use resources more efficiently: “Economic growth implies using a country’s scarce resources — labor, capital, natural resources, administrative and managerial capacity — more efficiently."94

Representational constraints also worked at the operational level. In one report on Nepal there is an explicit emphasis on poverty early on: “Nepal is still one of the poorest countries in the world with a per capita income of only US$170. Successive development plans, supported by growing foreign assistance, have failed to lift the country out of its condition of abject poverty."95 However, the economy is represented not in terms of “abject poverty” but in terms of growth rates and agricultural production numbers.

<table>
<thead>
<tr>
<th>Table 5.1: HISTORICAL GDP GROWTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Percent Per Annum in 1974/75 Prices)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average Annual Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
</tr>
<tr>
<td>Non-Agriculture</td>
</tr>
<tr>
<td>GDP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Population Growth Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.7</td>
</tr>
</tbody>
</table>

93 World Bank 1981a, 4; v.
95 World Bank 1985d, i.

Figure 5.3 GDP growth figures from the 1985 Nepal country report
A quantitative, ordered ontology privileges a macroeconomic perspective that represents a country with national accounts and simplified tables.

Given these representations, it should be no surprise that the solutions to these macroeconomic, growth problems are also macroeconomic in nature. The action plan recommended does not actually target poverty. Rather it aims for “GDP growth to rise to 3.8% per year, thus allowing for some growth in real per capita incomes.”

This is representational constraint in action.

The macroeconomic perspective introduced representational constraints that made growth natural. This contributes to the rising concern with macroeconomic health on the neoliberal model. Balance of payment problems got worse throughout the 1970s and many felt that adjustments were necessary. Two sets of policies seemed necessary. In the

---

96 World Bank 1985d, xi.
short-run, countries needed “stabilization.” In the long run, they needed to improve the efficiency of their economies. Both are a preeminent concern of a 1980 memorandum on Argentina which must “constrain domestic prices” and achieve “better resource allocation through specialization.”

The Berg Report explains that “more efficient use of scarce resources — human and capital, managerial and technical, domestic and foreign — is essential for improving economic conditions.”

The 1987 WDR asserts that cooperation on “macroeconomic policy” is needed to “promote smooth adjustment to these imbalances and to lay the groundwork for other reforms that would raise productivity.” In this perspective, though there are multiple paths to industrialization, “the same basic policy prescriptions apply to every country.”


In short, the macroeconomic perspective made it easy to downplay social concerns and poverty issues were rarely addressed in Bank documents. The representational constraints of macroeconomic analysis made it easier to focus on easily quantifiable ends like growth and the balance of payments, rather than develop complex procedures of social cost-benefit-analysis.

The macro perspective also feeds easily into a universalist, neo-modernization, bolstering the ideas that all countries should be trying to achieve economic integration with Western modernity. Beneath this public, rhetorical change, the projects of the 1980s focus on growth. While one project in my sample explicitly ori-

97 World Bank 1980b, i.
99 World Bank 1987, iii.
100 World Bank 1985a, iii.
101 World Bank 1985d, xi; 1985e, v-iii.
ented itself to “social achievements in relation to per capita income” and other to “more equitably distributed growth,” most projects aim to maximize “rapid growth,” “economic growth,” “resumption of growth,” “restoring economic growth,” or “stimulate growth.”

Starting in the late 1980s, elements within the Bank began to question the focus on Structural Adjustment and macroeconomic objectives. This change was soon bolstered by criticisms from outside the Bank. In this new climate alternative development perspectives flourished and research programs around gender issues, environmental degradation, bottom-up participation, good governance, and poverty alleviation took hold in various corners of the Bank. The 1990 *World Development Report* puts poverty front and center and even made the first attempts to quantify the number of poor people in the world. The 1992 *WDR* re-emphasized environmental goals, which had been dormant since the 1970s. The 1994 *WDR* argued that health was a central concern of development. Other publications touted the role of women in development and the importance of improving participation.

Poverty returns to Bank documents, but it comes with a renewed emphasis on the importance of poverty statistics. In a 1993 report on Indonesia support for public investment is combined with a poverty focus: “Public investment and recurrent spending are important determinants of the quantity and quality of social and economic infrastructure, which in turn affect income-earning opportunities for the poor as well as alle-

---

102 World Bank 1981b, 2; 1983, 3; 1985b, i; 1985c, i; 1989, 5; 1989b, 1; 1990b, 2.
103 Kapur, Lewis, and Webb 1997, 357-60.
104 World Bank 1990, 5, 41-42.
viating directly some of the worst consequences of poverty.”\textsuperscript{105} This poverty focus comes with a redoubled quantitative ontology: “This report shows the importance of adequate data from large-scale household surveys in analyzing poverty and designing appropriate policies: monitoring changes in poverty over time, identifying the regional location of the poor, and assessing their access to social services…”\textsuperscript{106}

Despite all this change at the highest levels of discourse, most project documents emphasize growth and macroeconomics.\textsuperscript{107} Eastern European countries in particular were invited by the Bank to join economic modernity. Poland, the Bank suggests, must turn towards to Europe to continue its transformation: “Projected GDP growth of 4.5% for 1994 looks realistic and could even be bettered. Policies to sustain recovery and allow Poland to complete her transformation into a modern, market-oriented, democratic society must capitalize on the strengths of recent performance, and remedy emerging weaknesses.”\textsuperscript{108} In projects, the dominant goals still seem to be macroeconomic health and “economic growth,” though some projects do explicitly emphasize poverty alleviation as a central target.\textsuperscript{109}

Macroeconomic and neoliberal ideas remain the common-sense background discourse of the Bank. Indeed, some analysts have questioned whether broadening the Bank agenda has really changed anything within the Bank. Robin Broad argues that the neoliberal orthodoxy continued to dominate the central research wings of the Bank.\textsuperscript{110}

\textsuperscript{105} World Bank 1993, iii.
\textsuperscript{106} World Bank 1993, vi.
\textsuperscript{107} World Bank 1996, i; 1998 1, 6.
\textsuperscript{108} World Bank 1994, i.
\textsuperscript{109} World Bank 1998, 6; 1996, i; 2003, 2.
\textsuperscript{110} Broad 2006.
### Table 5.2. World Bank Lending by Type of Loan, 1979-1989

<table>
<thead>
<tr>
<th>Lending Instrument</th>
<th>Project Cost ($USm)</th>
<th>% of Lending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptable Program Loan</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Debt and Debt Service Reduction</td>
<td>200</td>
<td>0%</td>
</tr>
<tr>
<td>Emergency Recovery Loan</td>
<td>2,014</td>
<td>1%</td>
</tr>
<tr>
<td>Financial Intermediary Loan</td>
<td>23,188</td>
<td>13%</td>
</tr>
<tr>
<td>Learning and Innovation Loan</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Rehabilitation Loan</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Specific Investment Loan</td>
<td>89,765</td>
<td>50%</td>
</tr>
<tr>
<td>Technical Assistance Loan</td>
<td>2,153</td>
<td>1%</td>
</tr>
<tr>
<td>Sector Investment and Maintenance</td>
<td>35,154</td>
<td>19%</td>
</tr>
<tr>
<td>Total Investment &amp; Special Lending</td>
<td>$152</td>
<td>84%</td>
</tr>
<tr>
<td>Sector Adjustment Loan</td>
<td>18,212</td>
<td>10%</td>
</tr>
<tr>
<td>Programmatic Structural Adjustment</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Structural Adjustment Loan</td>
<td>10,086</td>
<td>6%</td>
</tr>
<tr>
<td>Total SALs &amp; SECALs</td>
<td>$28</td>
<td>16%</td>
</tr>
<tr>
<td>Total Lending Project Cost</td>
<td>180,852</td>
<td>~99%</td>
</tr>
</tbody>
</table>

Moreover, as tables 5.2 and 5.3 show, SAL lending levels remain consistent over the 1980s and 1990s. From 1979-1989, SALs composed 16% of total Bank disbursements. In the 1990s, SAL lending remained at 16% of total Bank lending. Thus, SALs administered on a largely macroeconomic, pro-growth rationale remained important.
<table>
<thead>
<tr>
<th>Lending Instrument</th>
<th>Project Cost ($USm)</th>
<th>% of Lending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptable Program Loan</td>
<td>10,292</td>
<td>2%</td>
</tr>
<tr>
<td>Debt and Debt Service Reduction</td>
<td>2,828</td>
<td>1%</td>
</tr>
<tr>
<td>Emergency Recovery Loan</td>
<td>10,886</td>
<td>2%</td>
</tr>
<tr>
<td>Financial Intermediary Loan</td>
<td>13,468</td>
<td>3%</td>
</tr>
<tr>
<td>Learning and Innovation Loan</td>
<td>513</td>
<td>0%</td>
</tr>
<tr>
<td>Rehabilitation Loan</td>
<td>2,838</td>
<td>1%</td>
</tr>
<tr>
<td>Specific Investment Loan</td>
<td>320,122</td>
<td>66%</td>
</tr>
<tr>
<td>Technical Assistance Loan</td>
<td>6,029</td>
<td>1%</td>
</tr>
<tr>
<td>Sector Investment and Maintenance</td>
<td>34,578</td>
<td>7%</td>
</tr>
<tr>
<td>Total Investment &amp; Special Lending</td>
<td>$402</td>
<td>83%</td>
</tr>
<tr>
<td>Sector Adjustment Loan</td>
<td>33,553</td>
<td>7%</td>
</tr>
<tr>
<td>Programmatic Structural Adjustment</td>
<td>767</td>
<td>0%</td>
</tr>
<tr>
<td>Structural Adjustment Loan</td>
<td>41,166</td>
<td>8%</td>
</tr>
<tr>
<td>Total SALs &amp; SECALs</td>
<td>$75</td>
<td>16%</td>
</tr>
<tr>
<td>Total Lending Project Cost</td>
<td>485,161</td>
<td>~99%</td>
</tr>
</tbody>
</table>

*Table 5.3. World Bank Lending by Type of Loan, 1990-2000*

In addition, quantitative evidence from a simple content analysis shows that while poverty discourse rises in the 1990s if one looks at all levels of World Bank discourse, including official flagship reports, it never really matters in operational, project discourse.

The graph below shows the number of mentions for “growth” and poverty” from 1950-1999. As you can see, growth is a significant concept in Bank discourse throughout the period. The importance of poverty rises in accordance with the 1990 “Poverty” WDR.
However, if we look just at the operational level, we see that poverty never becomes a significant part of project discourse.

Therefore, despite a change in rhetoric at the higher levels of the Bank, at the operational...
level, poverty is still relatively insignificant.\textsuperscript{111} Moreover, if we look at evidence from the discourse analysis, we can see that the word “poverty” is defined predominantly in terms of income.

If mentions of poverty in these graphs were to indicate concrete concern for the well-being and flourishing of individuals, we might expect poverty projects to be linked to basic human needs, rather than raising incomes and economic growth. Take, for example, a 1986 report on “Poverty and Hunger.”\textsuperscript{112} The report argues the “food security” problem is caused by “a lack of purchasing power.” Therefore, the solution is to “[i]ntensify efforts to accelerate growth, through adjustment assistance, policy reform, and productive investment.”\textsuperscript{113}

Moreover, well into the 1990s and early 2000s, social scientists and anthropologists still reported that they were marginalized. One former Bank economist told Robin Broad though the early Bank had its own dominant traditions, it always had “room for alternative views”; however, in the 1980s neoliberal ideology made policy “firm, obsessive.”\textsuperscript{114} This ideological uniformity was enforced throughout the 1990s.\textsuperscript{115} Thus, the incoming social scientists tasked with broadening the Bank agenda had to make their work amenable to quantitative representation in order to get credibility.\textsuperscript{116} That is, projects with social goals were subject to the requirements of scientific discourse. One social scientist promoted the concept ‘social capital’ because he believed it would appeal to quantitative

\textsuperscript{111} We should note, of course, that growth declines in significance as well.

\textsuperscript{112} World Bank 1986.

\textsuperscript{113} World Bank 1986, v.

\textsuperscript{114} Broad 2006, 391.

\textsuperscript{115} Weaver 2008, 80-81.

\textsuperscript{116} Kardam 1993, 1777; Bebbington et al 2004, 44-47; Weaver 2008, 77-78.
economists and thus allow him to press social and civil society objectives with them. 117

Even at the higher, more public levels, the focus on economic growth is ideologically and politically defended. As Wade has shown, attempts to challenge or water down the central Bank message that free trade and open capital markets lead to economic growth, which must be the center of poverty alleviation strategies, are fiercely resisted. In 2000, Deputy Secretary of the Treasury Lawrence Summers directly intervened in Bank decision-making to ensure that Joseph Stiglitz’s public criticism of IMF and US Treasury policy leading up to and during the Asian financial crisis did not go unpunished.118 Later that year, Ravi Kanbur’s efforts to focus on the role of local empowerment in poverty alleviation and the negative effects of income inequality in the 2000 WDR were challenged by a US Treasury memo that “read like marching orders.”119 The Treasury department stated that the report should emphasize “faster economic growth, freer markets as the route to higher economic growth, less talk of widening world income distribution, and less emphasis on widening income distribution being bad for growth.”120 Alternative approaches to development are tolerated only to the extent that they do not challenge the growth imperative. Thus, despite the proliferation of the Bank agenda, it remains a predominantly scientific modernist organization: it uses scientific tools to help push a scientific and technological definition of progress as economic growth.

IV. NATURALIZATION: ECONOMIC GROWTH AS SCIENTIFIC PROGRESS

Bank documents show that the change in goals goes beyond representational con-
straints. The goal of growth is also naturalized by links to deep concepts in the discourse. Economic growth is connected to narratives of scientific and technological progress via the macroeconomic perspective.\textsuperscript{121}

The 1987 WDR asserts that cooperation on “macroeconomic policy” is needed to “promote smooth adjustment to these imbalances and to lay the groundwork for other reforms that would raise productivity.”\textsuperscript{122} In this perspective, though there are multiple paths to industrialization, “the same basic policy prescriptions apply to every country.”\textsuperscript{123} This universalism combines well with the conceptualization of economic progress in internationalist terms. A more efficient economy is facilitated by openness to the international economy.\textsuperscript{124} The more efficient the economy, the more foreign capital will be attracted by the country, which in turn provides capital for investment and growth. The 1987 WDR argues that efficient industrialization cannot be achieved by protectionist policies: the “Report finds that developing countries which followed policies that promoted the integration of their industrial sector into the international economy through trade have fared better than those which insulated themselves from international competition.”\textsuperscript{125} Indeed, without trade, “Adam Smith noted, development of industry is likely to be severely handicapped.”\textsuperscript{126} In the long run, “technological advance” depends “on scientific progress” which is best achieved by societies integrated into the global economy.\textsuperscript{127} All of this “requires little action by the government, relying largely on self-

\textsuperscript{121} Insert job talk text on british industrial revolution.
\textsuperscript{122} World Bank 1987, iii.
\textsuperscript{123} World Bank 1985a, iii.
\textsuperscript{124} World Bank 1987, 1.
\textsuperscript{125} World Bank 1987, iii.
\textsuperscript{126} World Bank 1987, 2. Double check comma in quote.
\textsuperscript{127} World Bank 1987, 6.
regulating market mechanisms to prevent disequilibria.” Development-as-scientific-progress is best facilitated by a neoliberal, technocratic government that relies on the operations of the market.

These ideas of growth as scientific and technological progress are not new. Indeed, they return the Bank to the modernization doctrines of the 1950s and 1960s. These ideologies slowly replaced the colonial ‘civilizing mission’ as the central ideology of Western superiority. As President Truman put it:

We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of under-developed areas . . . . The old imperialism – exploitation for foreign profit – has no place in our plans. What we envisage is a program of development based on concepts of democratic fair dealing . . . . Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge.

In this way, definitions of progress were linked to scientific and technological achievement. Throughout this period, faith in GNP growth was “an ideological axiom, a scientific belief.”

This recalls W.W. Rostow who defined a “traditional society” as one “whose structure is developed within limited production functions, based on pre-Newtonian science and technology, and on pre-Newtonian attitudes toward the physical world.” To reach take-off, societies must “exploit the fruits of modern science.” A country could reach the highest stage of development, “maturity,” when it “demonstrates that it has the technological and entrepreneurial skills to produce not everything, but anything that

---

128 World Bank 1980b, i.
129 Adas 1989, 410.
130 From the 1949 Inaugural Address. Quoted in McCarthy 2007, 4.
133 Rostow 1990 [1960], 6.
it chooses to produce.” Growth is thereby linked to the idea that all states can and should join Western scientific technological modernity.

V. CONCLUSION: CHALLENGING THE GROWTH IMPERATIVE

My main claim is that by McNamara bolstered the growth imperative in the long run by introducing scientific discourse with representational constraints that were naturalized by processes of communication and argumentation. In short, economic growth was easily modeled within the abstract, mathematical discourse of neoclassical economics and straightforwardly linked to narratives of scientific and technological progress.

Why is this explanation better than the alternatives? There are three main alternative explanations of the rise of the growth imperative in the World Bank. First, a Principal-Agent model might argue that the growth imperative in the World Bank was forced upon it by powerful states. For example, Gibbon argues that the Reagan and Thatcher governments drove the shift toward neoliberal policy and the focus on economic growth in the Bank. This is plausible, but if it were true, we would expect to see evidence of meddling by external actors like Congress or the White House inside the Bank. There is no evidence of this in the late 1970s when growth became ascendant. Congress does eventually put heavy public and financial pressure on the Bank to change its ways, but this pressure comes in the late 1980s and it comes on behalf of the environmental movement.

Second, the growth imperative may simply be a corollary of the neoliberal revolu-

tion in powerful Western states. Neoliberal ideology targeted the welfare state for de-
struction, but had to replace the state with another way to deliver security and prosperi-
ty. Economic growth offers a pro-market solution to the problem and thus was a natural
corollary of the neoliberal political project. If Bank policies were just a corollary of ne-
oliberalism we would expect the primary language of justification for neoliberalism to
be political: namely, growth policies should be defended on political grounds like
growth promotes and protects individual freedom. In fact, in my discourse analysis I
only noted one significant case where individual freedom was used as a justification for
Bank policy: in the 1987 WDR, freedom is linked to efficient outcomes and economic
growth.\footnote{World Bank 1987, 61.} The content analysis also shows that “freedom” is simply not a significant
concept in the Bank. “Freedom” appears in flagship documents in my sample 33 times in
the 1980s, and 68 times in the 1990s, but appears in operations documents only 10 times
in twenty years. Instead, I have shown here that the principle mechanisms that legiti-
mate and operationalize the growth imperative in the Bank draw on scientific discourse.

Third, the growth imperative could be a product of organizational learning within
the Bank. The organizational learning hypothesis suggests that neoliberal market re-
forms emerged from a rational learning process within the World Bank. On this view,
the capital-intensive development programs of the 1950s and 1960s left developing
countries with an extraordinary debt load. Then, the oil crises of the 1970s exacerbated
this problem by first flooding markets with cheap credit that was eagerly spent on de-
velopment projects and second by plunging the world into a deep recession. Together,
these factors pushed developing countries into balance of payments crises which made it
impossible for them to pay back their loans. In this situation, the Bank and the International Monetary Fund had little choice but to impose austerity on developing countries and shift to a development strategy that did not depend on cheap credit. This alternative strategy would deliver growth via free market reforms that would spur efficiency gains. Thus, pro-growth reforms were a rational and irresistible response to global economic conditions.

The observable implication of the organizational learning hypothesis is that the push for growth comes at the end of a lengthy “lessons learned” process featuring an extensive review of policy. However, no documents in my sample exhibited evidence of this. Growth is rarely defended as if it good for poverty alleviation with careful reference to the evidence. Moreover, as I demonstrated in the introduction, the connection between growth and poverty alleviation is still contested, so it seems implausible to belief that the Bank could have “learned” that growth policies were the best ones for the job. Moreover, Bank policy in the late 1980s persisted for some time, despite the fact that it was clear pro-growth policies were not working.

Finally, there are a variety of potential alternative explanations that place responsibility for the growth imperative on the economists themselves. For example, perhaps ideologically motivated economists advocated the growth imperative because it fit with their personal political vision, rather than their professional commitment to the scientific evidence. This and similar explanations are interesting and part of the larger story about the rise of neoliberalism. But they cannot explain the dynamics of a specific organization. Organizational outcomes must be explained by how economists had effects on organizational culture and so on, as I have done here. The fact is that many Bank officials
are not economists and are not neoliberal. These staffers made a good faith effort to pursue development according to the best evidence and techniques available. Explanations rooted in the features of economists themselves, cynical or otherwise, cannot explain why well-intentioned policies went awry.

Even if these alternative explanations are considerably stronger than I have given them credit for, my argument has implications for policymakers and activists who wish to challenge economic growth. That is, supposing that neoliberalism is the “master cause” in this case, my argument clearly shows that the predominant language of legitimation and operationalization of neoliberal policies is scientific and technological discourse. Thus, any challenge to neoliberalism must confront scientific discourse within the Bank.

Such challenges to neoliberal policy and economic growth have taken on new significance because of emerging moral and ecological critiques. First, morally, Amartya Sen and others have argued that economic growth may or may not be necessary for the improvement of quality of life in low-income countries. Sen argues that development be redefined in terms of the capabilities of people and pursue strategies that raise these capabilities. This might involve economic growth, but need not. My analysis suggests that the success of this project will depend on whether or not Sen and others can challenge and reform scientific discourse within the World Bank and other international financial institutions. Second, ecologically, many environmentalists now argue that any short-term solutions for climate change and long-term solutions to ongoing ecological crises will require countries to sacrifice economic growth for environmental concerns. Chal-

---

lenging the growth imperative in organizations like the World Bank is thus a key component of climate politics.

How can the hegemony of classical scientific discourse be challenged? If the Bank hired experts and analysts who represented reality with different models and discourses this might create beneficial means-ends effects. Alternative representations would denaturalize economic ones and precipitate new goals and values. Of course, in the 1990s the Bank hired many sociologists and anthropologists who were promptly ignored because their analyses did not resonate with the mathematical and modernist culture of the Bank. The problem was that economists continued to dominate the research department and country offices. Anthropologists were only brought in to run small experiments and to implement “participatory” side projects. However, if large numbers of anthropologists were hired, the way economists were in the 1960s and 1970s, and if they were given positions of structural power in the organization, their methods may contribute to a richer ecology of ends in the Bank. This may provide the technical and institutional materiel to elevate moral and environmental values in the Bank.

Implications: Alternative Approaches to Development

If these challenges are successful, what should the replace the growth-oriented development discourse? One alternative could be rooted in Sen’s capability approach. Policies would be linked to broader, richer indicators of well-being. His work has encouraged the use of alternative indicators such as the Human Development Index (HDI) which includes income, years of education and life expectancy in its formula. HDI is the basis of the United Nations Development Programme projects and reports. To the extent
that this measure more carefully maps onto substantive outcomes of interest, it is an improvement over GDP. However, there are a number of problems with HDI. However, as a simple quantitative indicator it is at risk of being naturalized. Naturalization on its own would not be a problem per se. But HDI is at risk of reification and if it were the standard of all development projects it would create incentives for shallow policies that extend the length of life and increase the years of education, whether or not these lead to improvements in the quality of life. Consider life expectancy, for example. In Sen’s work, the length of life in particular is a favored indicator because it tracks many aspects of a person’s physical and mental health. The fact that rural farmers in Kerala, India have longer life expectancies than poor black people in the United States, despite having less access to high-technology health care, demonstrates that length of life can includes information about mental and physical health, levels of violence, and community support. However, life expectancy can be easily manipulated by drugs and treatments add years to people’s lives without improving the quality of their lives. Since bureaucrats will be held accountable for demonstrable, measurable results they will have an incentive to achieve changes in the numbers, not in the substantive outcomes.

Second, HDI still smuggles in a Western vision of the good life rooted in economic progress and education. Many Westerners rightly value education, but I do not see a compelling reason to promote it as a universal standard of well-being. Rural farmers and indigenous peoples can enjoy rich fulfilling lives without years of education. Ideally, indicators of development success would be adjustable to the social context of the project and set by those affected by the policy.

Another capability-based approach may take up this challenge and create direct
poverty alleviation projects that are linked to substantive outcomes in the local context. Project designs would not seek to link policy to a macro indicator linked HDI or GDP at all. Instead, individual projects would set performance goals in their local context. This would mark a return to the kinds of direct, poverty alleviation projects McNamara tried to encourage in the Bank during the 1970s. In truly participatory decision-making, the people affected by development projects could create and choose the indicators of success themselves. Those affected could collaborate with anthropologists and engineers to design projects suited to local conditions and calibrated to local ends.

At the level of state policy, the capability approach might seek to achieve what Sri Lanka was able to in the 1960s and 1970s. Sen argues that Sri Lanka and Kerala delivered social services that raised life expectancy and education to enhance quality of life. One might argue that social programs are expensive and states cannot afford to provide exorbitant social services without economic growth. But education and healthcare are labor-intensive industries and in poor countries labor is cheap. Low labor costs allowed Kerala and Sri Lanka to deliver progress on human development without growth for decades.\textsuperscript{139} Of course, under the current neoliberal orthodoxy, such a discussion of alternatives is moot. But new qualitative and quantitative development research rooted in alternatives to growth may find a new way forward.

\textsuperscript{139} Sen 1999, 46-48.
REFERENCES

Primary Documents


Secondary Literature


242
Chapter 6

Disrupting Scientific Discourse
Expertise and Learning in United Nations Peace Operations, 1990-2010

“We must learn to eschew one-size-fits-all formulas and the importation of foreign models, and instead, base our support on national assessments, national participation and national needs and aspirations.”

– Secretary-General’s Report

I. INTRODUCTION

Throughout the Cold War, UN peacekeeping missions were neutral affairs and UN officials saw their task in strict a-political terms. After 1990, rationalist and modernist goals and values entered peace operations discourse as the UN sought to “build” peace in post-conflict societies. Thus, between 1990 and 2010 United Nations peacekeeping was radically transformed from monitoring ceasefires to performing a wide variety of peacebuilding projects such as negotiating peace agreements, providing development assistance, administering demobilization and reintegration programs, and assisting with good governance reforms. In short, the UN broadened the scope of peace missions to include rebuilding war-torn societies from the ground up.

What explains this transition? These changes are usually explained by the rise of liberalism. On this view, the dominance of American power and the collapse of alternative models of society at the end of the Cold War bolstered the global legitimacy of liberal

1 S/2004/616 2004, 1
western democratic capitalism and many institutions of international society adopted it as its standard model. This account is compelling because most scholars believe that liberal norms concerning basic human rights, cooperation, democracy, and economy dominate the cultural content of the international system. However, there are elements of the development and peacebuilding regimes that cannot be explained by the rise and dominance of liberal norms. The very notion that a state, nation, economy, or society can be built depends on a technical discourse that legitimates the construction of human society. These ideas rely on beliefs and cultural norms that are rooted in scientific and technological concepts. In this chapter, I argue that changes in peace operations discourse are indicative of the effects of scientific discourse on international society.

In doing so, I follow recent work by scholars of international politics that highlights the role of scientific discourse in peacebuilding. Barnett argues that liberal peacebuilding “has the vices of all grand social-engineering experiments.” Liberal peacebuilding reduces uncertainties and papers over knowledge gaps with “general models that frequently are developed from their most recent experiences in the field.” Sending suggests that “technical competence” continues to take precedence over local knowledge because the logic of peacebuilding is “deductive.” Buhta goes further, arguing that state-building is an archetype of “techno-politics” or “politics as technology” according to which “social relations can be mapped and known as objects of knowledge within a Euclidean space, and so rendered amenable to more and more intensive technical inter-

---

4 Barnett 2006, 90.
6 Sending 2009, 8.
vention.”7 On Buhta’s account, the success of the UN mission in Namibia created a “commitment to the idea of democracy as a political technology of peace-engineering.”8 Peacekeeping thereafter “presumes that these institutions can be produced, legitimated and stabilized as a matter of intention and design, with sufficient success to generate the desired political dynamics and outcomes.”9

If these claims are right, then peacebuilding efforts by the UN risk the same normative and policy pathologies we saw in the British colonial and World Bank cases. Organizations that use universal knowledge to control the fate of societies risk creating a neo-colonial enterprise that is unaccountable and ineffective. The arguments of Barnett, Buhta, and Sending are therefore important, but only an in-depth discourse analysis of primary documents in the UN system can evaluate the validity of these claims. This is an urgent and by no means purely empirical task. If peacebuilding practices embody a universalist techno-politics then the nations of the world should reconsider their support for these activities.

My research shows that reality in UN peace operations is more complex than the claims of Barnett, Buhta, and Sending indicate. While UN peace operations certainly depend on backdrop of scientific and technical ideas, the entry of classical scientific discourse (CSD) was actually disrupted in interesting ways. Reports show that officials explicitly deny the applicability of one-size-fits-all policies and precise, universal indicators of success. On the ground practices are concerned with social factors that do not reduce society to individuals or isolable objects. Goals remain tethered to the liberal goals

---

8 Buhta 2008, 523.
9 Buhta 2008, 526.
of peace and human rights. The persistence of alternative discourses presents a puzzle when compared to the outcome in the World Bank, where means-ends change made goals more calculable and modernist. Why did peacebuilding discourse resist scientific means-ends change? Answering this question is important: it provides the key to understanding how other political institutions can resist unintended change and the pathologies of scientific discourse.

In this chapter I address both these questions. First, how and why did UN peace discourse broaden to include peacebuilding tasks? Second, why is the push toward scientific means and ends disrupted? I assess the role of scientific discourse in peace operations by performing a discourse analysis of documents from the core UN institutions like reports to the General Assembly and Security Council, as well as documents from civil society organizations and think tanks. As in the case of the World Bank, I designed text selection so that I could capture both “official” discourse and operational discourse that captures UN actions on the ground. Documents were selected in two waves. First, I put all documents in the United Nations Peacekeeping Resource Hub online archive into a database and randomly selected a series of reports. I complemented this sample with manually-selected important public reports from the 1990s and early 2000s.

---

10 As in the case of the World Bank, I offer evidence from primary documents in the UN peace operations discourse. However, matters are complicated by the fact that unlike in the case of the Bank, where a single coherent organization can be identified and studied, here the organizations involved in UN peace operations are multiple and diffused across the UN system.

11 I study official peace operations discourse through reports like An Agenda for Peace, the “Brahimi Report,” and peacekeeping operations handbooks. Documents on “lessons learned” occupy an intermediary space, between official discourse and the situation on the ground. For example, the lesson learned reports from Sierra Leone and Kosovo are very influential on peacebuilding policy at the highest levels, but also provide accounts of what happened in the missions. Finally, the best readily available source for on the ground actions are the reports of the Secretary-General to the Security Council, which provide a report on each UN mission a few times a year. I open sections II and III by outlining official policy before looking into the more concrete actions of the missions in the later part of the sections.
To capture operational discourse I read all Secretary-General reports to the UNSC on Sierra Leone.\textsuperscript{12} I have aimed to remove individual bias by making document selection as arbitrary as possible and studying a large number of documents.

In these texts, I am looking for evidence of CSD. I focus on the universal, reductive, quantitative, rationalist, and modernist elements of CSD. When reports advocate objective peacebuilding knowledge and blueprints that can be applied to all cases, I count this as evidence of universalism. When they represent societies in atomistic terms that exclude or downplay social ties, I count this as evidence of a reductive ontology. When measurable indicators are called for, I count this as evidence of a quantitative ontology. When these epistemic and ontological elements are used to support calls for the control of societal outcomes to achieve economic development and scientific progress, I count this as evidence of rationalism and modernism.

I begin in the late 1980s, as peacekeeping missions became more complex, necessitating that the UN develop and cultivate expertise in UN peace operations (II). At this time the means-ends discourse of peace operations were political and liberal, embedded in a thick social ontology that emphasizes communities and relationships. In the early 2000s this discourse remained powerful, but was complemented by a rising technical means discourse and modernist goals like economic development (III). Nonetheless, the naturalization of these economic goals in scientific and technological terms is resisted. In the final sections of the chapter I argue that the organizational structure of the UN and the realities of peace operations help actors resist scientific discourse (IV-V).

\textsuperscript{12} In the future, I plan to read all reports by the Secretary-General on Kosovo and other important peacebuilding missions.
II. BEFORE PEACEBUILDING: THE LIBERAL PEACE DISCOURSE, 1989-1999

It is difficult to assess the degree to which scientific discourse entered and changed UN peace discourse in the years after the end of the Cold War because even in 1990, the UN system was embedded within the ongoing scientization of international society. The spread of scientific epistemes and ontologies throughout modern societies means that most individuals are socialized into worldviews that contain scientific concepts and ideas. Moreover, the rise of scientific organizations in global civil society and the dependence of international organizations on expertise from the natural and social sciences, means that scientific concepts are part of the everyday life of international society.

Thus, even in 1990, political problems in the UN peace operations discourse are already often perceived as technical problems that have technical solutions. Means-ends change had already unfolded, in a sense, because the ends of the organization were already been made more modernist and abstract because of general developments in international society. Nonetheless, there were specific organizational mean-ends pressures in the UN peace operations discourse during the 1990s. As peacekeeping operations got more complex in the post-Cold War era, more and more experts were brought into UN peace operations. These trends culminated in the Brahimi Report of 2000 which called for more expertise and knowledge to solve complex peace operations problems.

Scientific Discourse in the post-Cold War Era

In the last chapter, we saw that developments in physics during the Second World War had profound effects on the economics discipline and on the means and ends of the
The Second World War boosted the cultural authority of physics, which produced the atomic bomb and proved useful in the analysis of a variety of military problems. This ensured that the models and methods of physics were influential on the post-war development of the social sciences. Abstract, deductive and quantitative models of society made their way into the World Bank, transforming its ends and naturalization economic growth.

The same forces that acted on economics have, to a lesser extent, operated on political science and sociology. These disciplines are closer to the humanistic traditions than economics, but abstract models and statistics have had enormous influence on their development. All of these disciplines contribute to the discourses of the UN system because the international bureaucracy is trained in social science programs at leading universities. For the most part, international bureaucrats have studied economics and political science in their undergraduate training and thus have been shaped by the models therein. While this ensures that international bureaucrats have some inchoate scientific thinking when they join the UN, this is counter-balanced by two things. First, leading master’s programs in peace and conflict studies have been influenced by a humanist, theological tradition exemplified by the work of John Paul Lederach. This emphasizes spiritual, moral conceptions of society in contrast to the abstract models of the social sciences. Second, the United Nations itself is a profoundly liberal institution. Liberalism itself is, of course, closely tied to scientific ideas historically. However, in the United Nations the discourse of liberalism is primarily legal and moral and thus provides an

---

13 Lederach 2005.
14 E.g., Locke was a doctor, the Enlightenment movement pressed both.
alternative discourse. The discourse of liberalism retains a focus on human rights and justice, which, while universal ideals, are harder to quantify and manipulate in abstract models. So liberalism keeps UN practices closer to the ground, as it were.

This means that the UN system is a harder case for my argument than the Bank or other international organizations like the Food and Agriculture Organization or the World Health Organization. Social scientific discourses are in competition with a variety of other discourses that model peace and conflict and prescribe goals and values in alternative ways. Nonetheless, as we shall see below, there is some scientization of the UN peace operations discourse reminiscent of the early days of the British Colonial Office in Chapter 4. Experts enter and bring with them a faith in the ability to represent the world in an ordered and universal way that permits intervention. The modernism of physics continues to influence this model of expertise.

The interesting question is how long the physics influence will continue to dominate the social sciences and associated bureaucracies. By the 1970s and 1980s “big” developments in physics had slowed and the promise of a unified theory of reality seemed distant. The increasingly abstract and counter-intuitive ideas of string theory and quantum gravity meant that the cultural authority of physics has declined. Meanwhile, the incredible development of the biological sciences continued apace. Discoveries in genetics, ecology, and the medical sciences give the appearance of rapid progress in the sciences of life. The metaphors of the life sciences dovetail nicely with the fantastic images of chaos mathematics and complexity theory, creating a new powerful set of models.

---

15 Stephen Hawking is perhaps the last “celebrity” physicist in the vein of Einstein and Newton.
Homer-Dixon argues that these models are fast becoming the new “master science.”16

These developments are significant: the episteme and ontology of physics is more modernist, more deductive, universalist, and abstract. The tradition of social science and political analysis its dominance fostered was in turn, more removed from the rough ground of life. The biological sciences imply for social analysis more complex models of reality that allow for contingency and close empirical observation. Moreover, the holism of the biological sciences allows for the atomism of physics to be supplemented by a view of systems and ecologies bound together by relationships. In turn, these deviations from the physics model imply less control over the world is possible. In a world of contingencies and complex relationships, the illusion of control so central to modernism is dissipated. Thus, while the biological sciences are still recognizably scientific, as demonstrated in their objectivity, quantification, and ordered representations, they are substantially different from previous models of physics. With these changes, we can expect the social sciences to likewise become less modernist, less concerned with generalization, and so on.17 But in the short run, dominant modes of expertise remain modernist, and the representational constraints of expert models will still push them toward the manipulation of social and political life.

However these developments will have a considerable lag time before they enter politics. Thus, as experts and their scientific concepts enter the peace operations discourse throughout the 1990s, I nonetheless expect that the means and ends of peacekeeping will become more universalist, abstract, ordered, and modernist. Perhaps in the

16 Homer-Dixon 2009.
17 See Lieberson and Lynn 2002; Bernstein et al 2007. Though these developments might also be driven by learning. E.g., economics learning after the crisis it needs more isomorphic models. E.g., political scientists realizing that values matter in post-Cold War world, after seeing the effects of religion and so on.
long run the effects of scientific discourse will change, but I see little evidence that they

From Peacekeeping to Peacebuilding, 1990-2000

In the late 1980s, the thaw in the Cold War allowed UN Secretary-General Javier Pérez de Cuéllar to revisit an old Security Council mandate in Namibia. The mission oversaw the transition to Namibian independence and helped hold free and fair elections. Missions with similar mandates followed in Cambodia and El Salvador. Thereby, UN peace operations began a transition from traditional peacekeeping, wherein lightly armed UN troops monitor and enforce a ceasefire, to complex, multidimensional operations that include training civilian police, building rule of law institutions, monitoring elections, and drafting constitutions. While, as we shall see, these operations were considerably less modernist than their successors in East Timor and Sierra Leone, these operations nonetheless drew on a complex backdrop of scientific and liberal concepts. Thus, the peace operations discourse shared some features with the 19th century British colonial discourse. Richmond and Franks have argued that the mission in Cambodia, for example, rested on universalist ideas about society and culture:

The underlying assumption of the UNTAC mission was that if elections were imposed on the Cambodian political system and a measure of power sharing was established between the groups coupled with the implementation of liberal reforms in society and a market economy, liberal order would naturally follow and Cambodia would be guided from civil war into a situation of sustainable peace.

---

18 The UN also sent military observer groups to Afghanistan-Pakistan, Iran-Iraq, Angola, and Nicaragua in the late 1980s. These kinds of operations are not typically counted as "peacekeeping missions" per se.
19 Paris 2002 has drawn out a similar comparison.
20 Richmond and Franks 2009, 21. They go on to link this to the Enlightenment Rationalism of Kant: “This approach represents the liberal peace thesis that has its roots in Kantian thinking about perpetual peace.”
On this view, transitions to peace are automatic, natural processes set off by liberal institutions. This reveals an underlying rationalist episteme with a faith in the ability of experts and advisers to build institutions that will transform society.

The need for the UN to adapt to these new challenges was first identified in *An Agenda for Peace*, a 1992 report submitted to the United Nations Security Council by Secretary-General Boutros Boutros-Ghali. The report was short on operational details but the main ends and means are clear. Boutros-Ghali posited a number of interrelated goals for UN peacekeeping: “international peace and security,” “security, justice and human rights,” and “social progress and better standards of life in larger freedom.” The primary means to these ends are preventative diplomacy, peacemaking, peacekeeping, and peacebuilding. Notably, although the report suggested that more information and more people were needed, it did not call for additional ‘expertise,’ technical or otherwise. Indeed, it argued just the opposite:

Experience has shown that the greatest obstacle to success in these endeavours is not, as widely supposed, lack of information, analytical capacity or ideas for UN initiatives, Success is often blocked at the outset by the reluctance of one or other of the parties to accept UN help.

“The solution can only be long-term. It may lie in creating a climate of opinion, or ethos, within the international community in which the norm would be for member states to accept an offer of UN good offices.

This reveals the general sense that the central barrier to peacekeeping success was the “political will” of the warring parties and the international community. As the report said elsewhere, “[i]f conflicts have gone unresolved it is not because techniques for peaceful settlement were unknown or inadequate. The fault lies in the lack of political

---

21 UNSC 1995a. The report was supplemented by Boutros-Ghali in 1995.
22 UNSC 1995a, 45-6.
23 Cf. inter alia, UNSC 1995a, 16, 47, 49,
24 UNSC 1995a, 13.
These ends and means are embedded in a thick social ontology wherein peace must be consolidated by building social bonds of trust. The report privileged confidence-building measures as key factors for addressing the root causes of conflict. Peacebuilding projects must “not only contribute to economic and social development but also enhance the confidence so fundamental to peace.” However, the document also exhibits a technical conception of the United Nations as a machine or tool:

One requirement for solutions to these problems lies in commitment to human rights with a special sensitivity to those of minorities, whether ethnic, religious, social or linguistic. The League of Nations provided a machinery for the international protection of minorities. The General Assembly soon will have before it a declaration on the rights of minorities. That instrument together with the increasingly effective machinery of the UN dealing with Human rights, should enhance the situation of minorities.

However, such statements are the exception rather than the rule in An Agenda for Peace. After all, it concludes that “the search for improved mechanisms and techniques will be of little significance unless this new spirit of commonality is propelled by the will to take the hard decisions demanded.” Thus, in the early 1990s, there is no evidence that peace- and state-building are conceived in technocratic terms.

These themes are widely evident in the discourse analysis between 1990 and 2000. The Secretary-Generals report on the UN observer mission in El Salvador suggested that the barriers to institution building were barriers of political will and opposition, not knowledge barriers: “Although parties to the peace accords have been engaged, since the beginning of implementation, in a constant dialogue aimed at reaching agreement on

---

25 UNSC 1995a, 52.
26 UNSC 1995a, 61. Cf. 15, 45.
27 UNSC 1995a, 44.
28 UNSC 1995a, 40.
ways to ensure compliance with their commitments, opposition from important pressure groups and continuing institutional fragility have forestalled decisive Government action.”

In addition, the ends of the mission are stated in humanitarian terms:

“ONUSAL can take credit for having helped the Salvadorians to take giant strides away from a violent and closed society towards a democratic order where institutions for the protection of human rights and free discourse are being consolidated.”

The success of missions in Namibia, Cambodia, and El Salvador in the early 1990s added to the pervasive feeling that the rise of liberal democratic institutions in all countries was inevitable. This optimism faced stern challenges in Bosnia, Somalia, and Rwanda. In each case, UN missions stepped into unstable post-conflict situations. When violence hit, it was obvious that UN troops with a mandate only to “keep” the peace, rather than “make” or “enforce” the peace, were in danger. UN and US troops were injured, kidnapped and killed creating a crisis in the UN system. The missions in Bosnia, Somalia and Rwanda were failures in both military and humanitarian terms.

Many reports from the mid-1990s emphasized two themes: first, UN missions must be backed by sufficient force to fulfill their mandates; second, it is no longer clear if the traditional peacekeeping principle of “neutrality” is an appropriate principle on which to build mandates. In Bosnia and Rwanda there at least appeared to be clear perpetrators and clear victims. Therefore, it seemed a betrayal of UN principles to stand idly by under the guise of neutrality.

The ‘lessons learned’ report after the failure in Somalia contended that the success of

---

peacekeeping missions depends on a “unity of purpose” and sufficient “political will.”31 Again, the humanitarian aims of peacekeeping were grounded in a commitment to a thick social ontology as the authors called for “support for the revival of associational life.”32 The goal of ‘indirect peacebuilding’ should be the “resurrection of a web of civic, professional, business, athletic and other associations.”33 The document reveals a concern with rebuilding neighborhoods and communities as a central task of peace consolidation. Closely related is the emphasis on local, contextual plans and activities: “peace negotiations needed to be held in or near the zone of conflict, and timetables should have accounted for the needs of the local situation rather than being driven by budgetary or outside political considerations.”34 All of this lends credibility to the call for a “bottom-up approach to reconciliation and state-revival.”35 This report did not reproduce Boutros-Ghali’s devaluation of expertise, suggesting that “expertise should be consulted during the planning phase” and that experts need the “capacity to gather, analyse and feed information to the responsible security, political, or humanitarian officials.”36 However, they experts called for are experts “on Somalia” that can help specify the exact “nature of the problem.”37

The Secretary General’s report on the UN mission in the former Yugoslavia argued that the failure to prevent the massacre of civilians in Srebrenica was due to the fact that the UN and its member states had no “political will to confront the menace defying it”:

32 UNDPKO 1995, §34.
33 UNDPKO 1995, §34.
34 UNDPKO 1995, §36.
35 UNDPKO 1995, §37.
36 UNDPKO 1995, §17. Cf. calls for “technical soundness” of plans and programmes, §42.
37 UNDPKO 1995, §17
The community of nations decided to respond to the war in Bosnia and Herzegovina with an arms embargo, with humanitarian aid and with the deployment of a peacekeeping force. It must be clearly stated that these measures were poor substitutes for more decisive and forceful action to prevent the unfolding horror. As it stood, the peacekeeping mission in Eastern Bosnia was a “substitute” for “political consensus” amongst the member states and so was doomed to fail. Part of the problem, the report suggests, was that the UN tried too hard to be “impartial” in the face of actions that demonstrably violated the spirit of the UN Charter, and thus should have been stopped by the UN. The neutrality principle meant that initially, and for too long, the UN maintained a limited mission mandate: “the creation of an environment in which humanitarian aid could be delivered.” In the end, the problem demanded a “political/military solution” and not a “humanitarian solution.” This commitment to military and political solutions underscores the fundamental message of the 1990s in UN Peace Operations: that the humanitarian ends of peacekeeping are best served when backed by political and military support, not technical knowledge.

These failures discredited peace operations and the UN approved only one peacekeeping mission (in Slavonia) between 1996 and 1998. But by 1997, activists in the UN system were pushing for a return to peace operations on the basis of a rigorous “lesson learning” process. During this process, the UN continued to send small groups of observers to oversee ceasefires, train police and oversee the implementation of peace agreements in Guatemala, Angola, Haiti, Croatia, the Central African Republic, and Si-

38 A/54/549, 105.
39 A/54/549, 107.
40 A/54/549, 104.
41 A/54/549, 106.
42 Traub 2006, 116-17.
In 1999, the United Nations Observer Mission in Sierra Leone (UNOMSIL) was converted into one of the first peacebuilding missions. 1998 reports from Sierra Leone provide a window into early peacebuilding discourse and they demonstrate that the thick social ontology, rooted in relationships and social ties, was linked to a political/military problem-solving episteme. Reports highlighted long term, sustainable solutions to ongoing “atrocities” that must be rooted in social processes and education programs. The main tasks of UNOMSIL included administering a Disarmament, Demobilization, and Reintegration (DDR) campaign and training police forces. DDR tasks range from the technical to the social. On the technical side, these projects registered ex-combatants and exchange their weapons for food, money, or job training.43 On the social side, however, reintegration demands reincorporating young men and women into society. This is a social process which, in Sierra Leone, worked by encouraging ex-combatants to contribute to “community welfare.” In turn, these contributions had to be recognized by the “local community.”44 One report revealed that thinking about police training ranges from the technical to the social. On the technical end, military and police advisers must train Sierra Leonean police officers to use their equipment and to perform police duties on a Western model.45 On the social side, these officers must be educated and socialized. They must be taught “the role of the police in a democratic society and the disciplinary code of conduct.”46 But moreover, they must be taught “effective and efficient policing

45 See, e.g., S/2001/228, 2, 6.
based on local needs and community involvement.” In both cases, peacebuilding practices display an implicit concern with the necessarily social basis of post-conflict life.

The importance of social factors is certainly relevant to peace at the level of society as a whole. Reports show that social factors are also perceived to be crucial for military and diplomatic success. Diplomats must work hard to build relationships that hold peace agreements together. These agreements must be “affirmed” by individuals with confidence and trust in one another. As one report puts it, the precariousness or “fluidity in the security environment stems primarily from the relationship between” the warring armies. In part, peace agreements are held together by personal and organization relationships.

Social epistemes and ontologies in turn support the liberal discourse on ends. A 1998 report on the situation in Sierra Leone states that the goals are to “restore peace, democracy and human rights” via military assistance and “political dialogue and national reconciliation beyond the programme for the disarmament, demobilization and reintegration.” The report concludes: “The restoration of stability in Sierra Leone will be a long and arduous process and will continue to require military support… the Government needs assistance in its efforts to establish a new professional armed force under civilian control, as well as an effective and well-motivated police force. The commitment of all Sierra Leoneans to achieving peace through dialogue and national reconciliation will also be essential.” Thus, it echoes the central lesson of the 1990s: complex peacekeeping

48 S/1999/1003, 1, 9.
49 S/1999/1003, 3.
51 The Report concludes: “The restoration of stability in Sierra Leone will be a long and arduous process and
operations must be backed by political and military force. Political and military force in turn depend on deeper discourses rooted in consensus or agreement and intersubjective social ontologies.

III. THE RISE OF PEACEBUILDING: PRESSURES FOR SCIENTIFIC DISCOURSE

After 1999, a number of factors generated pressures to import scientific discourse. First, the lessons learned reports from the failures of the 1990s argued that these failures could have been prevented with better political analysis. This call was reinforced by the rising complexity of peace operations the UN took on in the late-1990s. These “state-building” missions increased demand for expertise in peace operations. Peace operations organizations like the Peacebuilding Commission have explicitly forged links to the International Monetary Fund and the World Bank. This opened the door for economists and other experts to enter the UN peace operations discourse. Economists had already entered debates on the causes of civil wars and their resolution, and were easily incorporated due to newfound concerns with economic development in the peace process. These trends were advanced by organizational changes. In the late 1990s, demands to improve the accountability and effectiveness of the UN led to the use of a new budgeting process called “results-based budgeting.” Results-based budgeting called for precise measurement of project outcomes and more rigorous evaluation of projects.

will continue to require military support... the Government needs assistance in its efforts to establish a new professional armed force under civilian control, as well as an effective and well-motivated police force. The commitment of all Sierra Leoneans to achieving peace through dialogue and national reconciliation will also be essential.” S/1998/1176, 16.
54 Lipson 2010, 269-70.
This created a channel for the entry of CSD and its attendant representational constraints. But, as we shall see, features of the organizational structure and conflict environment help generate resistance to CSD in the UN peace operations discourse. While some scientific concepts enter, on the whole UN peace operations remains embedded in a social and liberal discourse.

In this section, I first provide evidence from the “official” UN discourse as codified in publicly released reports such as the 2000 Brahimi report. Second, I provide evidence from reports of events on the ground to uncover the discursive rules and assumptions that structure peacebuilding operations themselves.

Complex Peace Operations and the Brahimi Report

First, the lessons learned report from the failure in Rwanda pinned some of the responsibility for the genocide on the “lack of analytical capacity.” The report argues, “there was not sufficient focus or institutional resources for early warning and risk analysis.”55 While it is not clear whether “analysis of the flow of information” would have made it “possible to predict a genocide” but it is clear the UN mission did not heed NGO warnings.56 Reports like this supported the call for more robust peacekeeping. With the demand for peacekeeping rising in the late 1990s, the number of UN troops ballooned. By the end of 2000, the tiny Department of Peacekeeping Operations was overseeing 45,000 troops.57 Moreover, the UN found itself in charge of “transitional administrations” in Kosovo and East Timor. After the NATO bombing campaign in Koso-

57 Traub 2006, 127.
vo ended, the UN was put in charge of coordinating the relief efforts, rebuilding the small province’s infrastructure, and establishing some semblance of local government.

In East Timor, the UN entered to oversee a “consultation” on the small territory’s status vis-à-vis Indonesia. However, when the East Timorese people voted for independence, local pro-Indonesian militias spread violence and the UN ended up supervising an Australian peace enforcement operation. The UN was then charged with building state institutions were there had previously been military colonial rule.

The challenges of state-building in East Timor and Kosovo created pressure for change in the means discourse. There is a lot of continuity, but the discourse is increasingly infiltrated by technical ideas and norms. This reflects the demands for additional experts to solve the ‘complex’ problems posed by the missions in East Timor, Kosovo, Sierra Leone, the Democratic Republic of the Congo, and Ethiopia-Eritrea. But is also reflects changes in the underlying episteme and ontology of the peacekeeping discourse which increasingly privileges expert knowledge and deploys thin ontologies featuring atomic units. This new ontology contributes to a change in ends: UN peace discourse becomes more modernist, bringing in economic development and growth goals that are objective, universal, and amenable to calculation.

During this time of rapid expansion and change in UN peace operations, missions had little precedent and even fewer institutionalized resources. Peacebuilding knowledge and expertise was cobbled together from national government sources and various departments in the UN system. A special commission led by former Algerian
foreign minister Lahkdar Brahimi was supposed to address this problem.\textsuperscript{58} The Brahimi report provides a documentary record of UN peace operations discourse during this time of change. It demonstrates continuity with the dominant themes of the period 1990-1999, but also exhibits considerable change. In the same vein as the \textit{Agenda for Peace}, the Brahimi report argued that political will and especially “the fundamental ability to project force” are necessary for peacekeeping success. But, “force alone cannot create peace; it can only create the space in which peace may be built.”\textsuperscript{59} Peacekeepers can “maintain a secure local environment” but then peacebuilders must “work to make that environment self-sustaining” via civilian police training programs, Disarmament, Demobilization and Reintegration campaigns and quick impact economic projects.\textsuperscript{60}

The peacebuilding model introduced a technical aspect to the task at hand: peace must be built in the space created by peacekeepers. This model was supported by a technical means episteme that advocated employing peacebuilding “tools” to build the “foundations of peace.”\textsuperscript{61} These “complex” tasks require political will, but they also demand “expertise” from “military analysts, policy experts, and highly qualified information systems analysts.”\textsuperscript{62} UN agencies in the field require expertise not just to plan and build institutions but also to stay ahead of developments: “without significant knowledge generating and analytic capacity, the Secretariat will remain a reactive institution.”\textsuperscript{63} Legal codes and civilian police institutions should be designed and overseen

\textsuperscript{58} Thakur 2006, 41.
\textsuperscript{59} A/55/305-S/2000/809, viii.
\textsuperscript{60} A/55/305-S/2000/809, viii-ix.
\textsuperscript{61} A/55/305-S/2000/809, 3.
\textsuperscript{63} A/55/305-S/2000/809, 12.
by legal and police experts.⁶⁴ These experts are no longer conceived of as local, national experts, but should be drawn from an experienced pool of international expertise. This provides evidence to support Sending’s claim that the “authority of external actors… is not only derived from their humanitarian mandate, or the legal mandate from the UN charter, or from the resources that are marshalled… [but] from how peacebuilders claim to *know* what needs to be done to prevent future conflicts, and to help build a liberal-democratic state.”⁶⁵ Thus, this is evidence that the episteme of the peacekeeping discourse is shifting to support defenses of intervention rooted in ‘expertise’ and claims to superior knowledge ultimately legitimated by the authority of science.

This opened the door for economists like Paul Collier who entered debates about civil wars and the sources of peace. Paul Collier served as the Director of the Research Group at the World Bank from 1998 to 2003 and used his time there to articulate a new economic theory of conflict resolution.⁶⁶ People like Collier provided a bridge between academic experts and the traditionally practitioner dominated field of peace operations. Collier and other economists attended a conference on economic management and post-conflict civil society hosted jointly by the World Bank and the Centre for Conflict Resolution. The conference consensus concluded that there are two elements of successful reconstruction: economic reform and civil society recovery. The introduction of economic imperatives is new and foreshadowed the rise of development as key components of peacekeeping and peacebuilding missions. The emphasis on a thriving civil society seems to reproduce the thick social ontology uncovered earlier. However, at this time

---

⁶⁵ Sending 2009, 8.
civil society was not conceived in terms of ‘associational life’ or social bonds, but in terms of “social capital.” Social capital is defined as “the organizations, networks, and unwritten mores and rules that facilitate coordinated action and enable people to undertake cooperative ventures for mutual advantage.” This retained some of the earlier concern for social relationships as underlying peace consolidation, but it did so in a way that gives the appearance that this goal could be calculable and quantitative. After all, the concept ‘social capital’ depends on the analogy with ‘private capital,’ namely money. Conceiving of social relationships as ‘capital’ strips social ontology of its thickness, replacing the focus on confidence and trust building with economic recovery as the core task of peacebuilding. This is a clear move towards models that tacitly employ a scientific ontology composed of “discrete units or atoms” that are easily controlled and manipulated.

Paul Collier was also the lead author of the influential 2003 report *Breaking the Conflict Trap*. The report argued that contrary to the prevailing wisdom, religious and ethnic divisions are not reliable predictors of civil wars. Instead, “[i]f a country is in economic decline, is dependent on primary commodity exports, and has a low per capita income and that income is unequally distributed, it is at high risk of civil war.” These economic conditions “create a pool of impoverished and disaffected young men who can be cheaply recruited by “entrepreneurs of violence.”” The policy prescriptions focused on

---

68 WB/CCR 1998, 8.  
69 On social capital in the World Bank see Bebbington et al 2004.  
70 Collier et al 2003, 4.  
71 Collier et al 2003, 4. A full critique of this analysis is beyond the scope of my task here. I will just highlight two points: 1) the quantitative measures used to control for ethnic and religious divisions do not actually map validly onto religious and ethnic divisions, which are intersubjective (Cf. Allan and Hopf n.d.); 2) the
alleviating these economic conditions. Stabilization, economic growth, and financial measures against rebel groups can reduce the risk of civil war. The report included a number of “simulations” that model the effects of various aid programs on precise civil war risk scores. The model considers a hypothetical country in the middle of its first post-conflict decade. If a large aid program were to succeed in raising the growth rate 2 percent per annum over a decade, “[b]y the end of the decade the risk of conflict has been halved from a 44 percent risk of conflict in the ensuing five years to a 22 percent risk.”\(^72\) This analysis employs objective methods that assume ahistorical, apolitical, universal countries amenable to one-size-fits-all policies. Peace consolidation is measured in precise terms as the “risk of conflict.” The work of Collier and his colleagues were widely cited and influential in the academic peace operations discourse, and as we shall see later, were evident in the UN concern for economic development in peacebuilding operations.

Organizational changes also contributed to the rise of technical means and calculable goals in peace operations discourse. In the late 1990s, the UN implemented results-based budgeting designed to ensure that projects were having a real impact on outcomes and ensure accountability to stakeholders. Prior to this initiative the UN certainly evaluated projects against quantitative achievements and results. The push for results-based budgeting required that indicators were “applied at the beginning of the programme planning cycle.”\(^73\) This would break down the “separation between monitoring and evalu-

\(^{72}\) Collier et al 2003, 168.

\(^{73}\) A/54/456, 7.
tion” on which evaluation is a purely post hoc activity. It would help to address and correct “methodological difficulties” in previous budgeting procedures and help eliminate “inefficient activities.” As Michael Lipson points out, results-based budgeting “assumes and depends upon the existence of a clear, logical hierarchy in which predictable causal mechanisms link organizational activities and processes to measurable outputs and outcomes.” As such it brought a scientific episteme and ontology into peace operations discourse.

Changes in the Official Discourse, 2000-2010

The Brahimi report reflected both continuity and change in higher-level, official peace operations discourse. Kofi Annan’s report, Prevention of Armed Conflict, demonstrates both aspects of peace discourse around the year 2000. On the one hand, it calls for analysis and introduces calculable goals, reflecting elements of the classical scientific episteme and ontology. The opening of the document cites a report which “calculated the cost differentials” of peace operations and concluded that “a preventive approach would have saved the international community almost $130 billion.” The document lists a series of quantifiable indicators: GDP in Lebanon in the 1990s “remained 50 per cent lower than it was before fighting broke out in 1974”; civil war is responsible for “abandonment of an estimated 80 per cent of Angola’s agricultural land”; and, during

74 A/54/456, 13.
75 A/54/456, 5.
76 Lipson 278-79.
77 A/55/985-S/2001/574.
the conflict, “food production in Burundi dropped 17 per cent.”79 On the other hand, these goals are mostly linked to real outcomes and remain connect to a thick social ontology concerned with “confidence-building” and the “root causes of conflict.”80 His call for analysis is not a call for abstract theory but “a deep and careful understanding of local circumstances and traditions.”81

This duality is also evident in a 2002 speech by Under-Secretary-General for Peacekeeping Operations Jean-Marie Guehenno. He argues, familiarly, that a lack of “political will” caused the setbacks of the mid-1990s and that peacebuilding now depends on filling the “commitment gap.” Member states who must deliver clear, achievable mandates that address “the root causes of conflict” and back them with the necessary resources.82 However, his speech offered no evidence of the thick social ontology which peacekeeping discourse depended on in the early 1990s. Moreover, Guehenno’s speech engaged in cost/benefit analysis of the value of peacekeeping.83 This is a problematic practice because the humanitarian goals of peacekeeping are not easily measured. Guehenno’s speech reveals this when he assessed the benefits of peacekeeping in terms that could be quantified. Namely, he argued that since failed states are breeding grounds for terrorism, peacekeeping is an investment in “stability and security” that can be traced to dollars and lives saved in the member states. As well, he suggests that peacebuilding addresses instabilities that perpetuate poverty in failed states, “forcing them to continue to

80 A/55/985-S/2001/574, 8, 16.
81 A/55/985-S/2001/574, 8.
82 Guehenno 2002, 3-6.
rely on foreign aid.” This demonstrates not only that the high costs of complex missions strain political and financial commitments, but reveals the epistemic rules that underlie the peacekeeping discourse are increasingly technical and calculative. This illustrates tacit epistemic assumptions about the desirability and objectivity of calculability and an ontological move to render all objects of peacekeeping in discrete terms amenable to scientific analysis. Change is also evident in Guehenno’s contention that the twin goals of the UN mission in East Timor were to give the country democratic government and a “growing economy.” The speech was a noticeable departure from the usual humanitarian ends posited by UN documents in the 1990s. Scientific epistemes and ontologies had clearly entered peacebuilding discourse.

The new emphasis on governance and development goals was also reproduced in the Peace Operations Year in Review 2003 report. Here, the old goals of providing humanitarian assistance, promoting human rights, and restoring the rule of law coexisted with economic development. The report states that the experience of the UN in Kosovo “established progress in economic development as one of the basic standards to be met before final status discussions.” Similarly, in a 2004 report by the Secretary-General Kofi Annan to the UN Security Council, the goals of transitional justice initiatives are to “enhance human rights, protect persons from fear and want, address property disputes, encourage economic development, promote accountable governance and peacefully resolve conflict.” Calculable goals like economic development were established in the peacekeeping discourse alongside traditional humanitarian concerns by the mid-2000s.

---

84 Guehenno 2002, 10.
86 UNDPI 2004, 18.
The 2003 Peacekeeping Handbook also reflected both discourses. The goal of peacekeeping is to “[m]onitor a ceasefire” and “[p]rovide a secure environment.” But it is also to “[l]ead states or societies through a transition to stable government based on democratic principles, good governance and economic development.” Again, old humanitarian goals coexist with new governance and development goals. This reflects changes in the underlying episteme and ontology.

The handbook chapter on civil affairs argued that the increasing “complexity” of peacekeeping mandates demands a “range of specialized expertise” including professional from “political science, law, international relations, business administration, engineering, economics” etc. Four of these disciplines are dominated by scientific epistemes and ontologies. The chapter also departed from the previous discussions of political will. Here, when the UN is confronted by those who “may try to obstruct the work of a mission,” it “is the task of civil affairs to analyse problems and chart a way through the obstruction.” This places inordinate faith in the power of analysis to deal with what is usually framed as a political problem. Moreover, the handbook encourages civil affairs to measure success against “established and quantifiable benchmarks.”

Elsewhere, the Handbook called for all operations to include “technical assessment mission” “[a]s soon as security conditions permit.” This reveals a certain amount of ‘techniziation’ that is also on display in the dual political and technical discursive underpinnings of office of political affairs: “The fundamental concern of political affairs in

88 UNDPKO/PBPU 2003, 2.
89 UNDPKO/PBPU 2003, 35.
90 UNDPKO/PBPU 2003, 39.
91 UNDPKO/PBPU 2003, 43.
92 UNDPKO/PBPU 2003, 3.
a peacekeeping context is to understand the dynamics of the armed conflict that created the requirement for a peacekeeping operation, to follow closely the evolution of these dynamics and to develop strategies to help the parties in conflict resolve dispute through peaceful means.”93 That is, central tasks include, on the one hand, “[e]stablishing contacts” and “[w]orking with diplomats to use the leverage of Member states.”94 Yet, on the other hand, technical tasks are also prominent: “[a]nalysing political developments,” “[d]eveloping strategies,” “[p]roviding policy advice” and “[c]onceptualizing, planning and establishing new political institutions.”95 Political affairs officers are “expected to maintain comprehensive knowledge of the overall situation” and should “continuously review and evaluate political developments.”96

Despite these changes, the same report shows that means discourse had not been completely taken over by technological concepts and convictions. In the chapter on the duties of the Special Representative of the Secretary-General, the ‘art of diplomacy’ is clearly valued and given pride of place: “The SRSG establishes legitimacy through impartial and transparent dealings… The SRSG must also be able to mediate and build consensus for the political process, which requires effective planning and communication skills and a willingness to become engaged directly and personally at all levels.”97 The document also fell short of advocating the use of universal, abstract knowledge. It stated that political officers must be ready to “provide creative solutions” because presumably it is obvious that no two situations will be the same and that exhaustive

93 UNDPKO/PBPU 2003, 23.
94 UNDPKO/PBPU 2003, 23.
95 UNDPKO/PBPU 2003, 23.
96 UNDPKO/PBPU 2003, 26.
knowledge and analysis is not really possible.\textsuperscript{98}

In a Secretary-General report on transitional justice, the barriers to effectiveness now include both old barriers like “lack of political will” and new ones like “domestic technical capacity.”\textsuperscript{99} This reflects the fact that the episteme and ontology on display here now have two dimensions. On the one hand, the report argues for contextual means:

“We must learn to eschew one-size-fits-all formulas and the importation of foreign models, and, instead, base our support on national assessments, national participation and national needs and aspirations.”\textsuperscript{100} On the other hand, in the very next sentence, it portrays peacekeeping and peacebuilding as political and technical tasks: “Effective strategies will seek to support both technical capacity for reform and political will for reform.”\textsuperscript{101} Moreover, the contextual standards it calls for are to be determined by “[b]oth national and international experts,” after all, “effective and sustainable approaches begin with a thorough analysis of national needs and capacities, mobilizing to the extent possible expertise resident in the country.”\textsuperscript{102} This demonstrates that the epistemic foundations of peacekeeping methods increasingly privilege technocratic knowledge.

The ontological foundations also exhibit changes. The transitional justice report employs a tacit ‘relationalist’ ontology in which a society is the product of the way institutions fit and relate together: “Approaches focusing on one or another institution, or ignoring civil society or victims, will not be effective.”\textsuperscript{103} Rather, since institutions are “in-

\textsuperscript{98} UNDPKO/PBPU 2003, 33.
\textsuperscript{99} S/2004/616, 3.
\textsuperscript{100} S/2004/616, 1.
\textsuperscript{101} S/2004/616, 1.
\textsuperscript{102} S/2004/616, 6.
\textsuperscript{103} S/2004/616, 1.
terdependent” a “holistic” strategy is needed. A relational ontology does not posit discrete, calculable units, and so is thicker than the ontology of CSD. However, this is a much thinner social ontology than in the early 1990s when social bonds between people were the primary constituents of peace. Instead, now the connections between institutions are constitutive of society. For this and other reasons, it is clear that more and more technical elements are slipping into peacekeeping discourse.

Analysis of the 2008 Peacekeeping “Capstone Doctrine” tempers some of these claims while supporting others. For instance, the document did not place great emphasis on ‘expertise’, preferring the language of “integrated planning” rooted in “an in-depth appreciation of the specific country setting.” Instead, the 2008 doctrine returned to the older means of maintaining political consensus and facilitating dialogue. Yet, it did not restore the thick social ontology that once accompanied the contextual means. Instead the plan is to “establish the necessary security conditions for the free flow of people, goods and humanitarian assistance” and “maintain pressure on the parties to implement key institutional reforms.” This recalls Kofi Annan’s characterization of the peacebuilding task as one of building interdependent institutions rather than restoring peoples’ trust, confidence and the social fabric of society. Where local norms and individuals do enter the report, it is as a reminder to peacekeepers that their behavior has a ‘social, economic and environmental impact’ and so they should be aware that some behaviors “e.g.: employment of women in non-traditional gender roles, mixing and social-

---

105 Nexon 2009.
106 UNDPKO/DFS 2008, 54.
ization amongst genders, drinking, gambling, inappropriate behavior, etc.” may create “friction.” Thus, the report gives the impression that peacekeeping is a technical task where universal and well understood activities (DDR, elections monitoring, human rights monitoring, and humanitarian assistance) can transition a society from war to peace.

The official reports between 2000 and 2008, therefore, offer ambivalent evidence. On the one hand, technical language entered UN peace operations discourse and there were increasing calls for expert knowledge to solve complex problems. On the other hand, peacebuilding reports and manuals remain concerned with social factors and political will. Despite this ambivalence in the discourse, it is clear that the whole idea of peacebuilding depends on scientific epistemes and ontologies. In 2008, one security council member noted that he welcomed the expansion of peacebuilding efforts in Sierra Leone because “it marks another significant phase in the United Nations experiment in post-conflict peacebuilding, with Sierra Leone as the laboratory.” That this expansion was recommended on the basis of “carefully measured benchmarks” was further cause for celebration. Another security council member comments that UNAMSIL has provided a “model” with a “well-calibrated plan…to be emulated.”

Continuity in the Operations Discourse

The Brahimi report foreshadowed these changes in the UN peace operations discourse at the higher “official” levels of decision-making. What is happening on the

---

109 UNDPKO/DPS 2008, 82.  
110 S/PV.5948, 2.  
111 S/PV.5948, 2.  
112 S/PV.5334, 5.
ground in UN missions? Continuity with earlier social ontologies is evident in some documents from the early 2000s. An International Crisis Group Report on Hutu Rebel Disarmament, Demobilization, and Reintegration campaigns places a heavy emphasis on the need for a “political consensus that is first subjected to an inclusive discussion.”\textsuperscript{113} The report argues that Kagame’s Rwandan government must be “convinced” by the international community to end his support for the violence in Congo and to conduct a “political opening” that necessitates a “genuine national debate.”\textsuperscript{114} This argument for dialogic and communicative means is rooted in a thick social ontology that highlights the need for political reconciliation and reintegration rooted in changing social relations.

One report by a UN official in East Timor suggests that the mission there was successful because it was backed by legitimacy: “legitimacy based on the justness of the struggle; legitimacy based on the morality underpinning each of the UN-mandated missions; and the legitimacy of the basic ‘right’ of a small population of under one million people to determine their own future and to break free from the poverty cycle.”\textsuperscript{115} Both of these documents demonstrate that the focus on ‘political’ means persists in post-Brahimi era.

However, there is marked change of tone and in the episteme and ontology of the reports. Secretary-General reports after 2000 are more technical and feature more scientific concepts and terms. In one 2003 report on Sierra Leone, the security “climate” is analysed in terms of “internal” and “external factors.”\textsuperscript{116} A 2005 report states that the “short-term indicators regarding internal security are positive, with little probability of a

\textsuperscript{113} ICG 2003, 25.
\textsuperscript{114} ICG 2003, ii.
\textsuperscript{115} Smith 2004, 5.
\textsuperscript{116} S/2003/663, 2.
return to civil conflict.” Projects are “experiments” on which UNAMSIL “evaluates data relating to all benchmarks collected in the field.” Economic development measured in terms of “gross domestic product” enters as an important indicator of peacebuilding success. The 2005 report speaks about GDP at greater length: “Real gross domestic product (GDP) was estimated to have grown by 7.3 per cent in 2005…While future growth is projected to slow down, macroeconomic performance is expected to remain strong.” This is accompanied by phrases exhorting better investment common in World Bank reports. This reflects the reality that peacebuilding after 2002 incorporates the World Bank and its economic experts. The 2003 report on Sierra Leone contains many references to partnerships with the Bank.

Moreover, in Sierra Leone after 2002, the dominant organizing theme of peace operations shifted from political-military action featuring DDR to the “4Rs”: “repatriation, reinsertion, rehabilitation and reconstruction.” If reinsertion, for example, comes to displace “reintegration” as a way of conceptualizing incorporating ex-combatants into society, peacebuilding ontology would lose the rich, intersubjective connotations that come with the idea of “reintegration” into community life. Reinsertion connotes only placing an individual back into society, rather than working them into social contexts. However, for now, it seems that the two metaphors can live in parallel. The 2003 report maintains a community-centered approach:

The reintegration of ex-combatants will continue to be central to the consoli-
tion of peace in Sierra Leone. However, it should be stressed that the long-term reintegration of the ex-combatants can only be achieved through societal cohesion and the revival of the war-ravaged economy. To this end, development partners have expressed support for the planned transition to community-based reintegration, under which the long-term needs of the ex-combatants will be addressed as part of the overall needs of their communities.123

So while the reports get more technical, reflecting the changes at the higher levels of peacebuilding discourse, action on the ground maintains pre-2000 social ontologies and projects. That said, clearly some modernist goals have gotten more prominent in peacebuilding, as economic organizations have had greater influence on the process.

IV. DISRUPTING NATURALIZATION

In the British colonial and the World Bank cases, new epistemic objects and representational constraints privileged new goals that were naturalized via links to scientific and technological concepts. In the UN peace operations discourse this dynamic of means-ends change is short-circuited. As we saw above, one report from the Secretary-General eschews universal methods and explicitly advocates contextual means: “We must learn to eschew one-size-fits-all formulas and the importation of foreign models, and, instead, base our support on national assessments, national participation and national needs and aspirations.”124 On their own statements like these might not mean much, but there is a distinct absence of “general” claims and blueprints in the United Nations peace operations discourse, even if the whole enterprise of peacebuilding itself rests on universalist assumptions about society and culture. Modernist economic goals began to enter peace discourse in the years after 2000, but, as we shall see, these goals

are tied to real people’s lives and are rarely valued as ends in themselves. Economic goals are not linked to narratives of scientific and technological progress. The rise of CSD in UN peace operations discourse is disrupted and resisted. Why?

Learning from the Ground Up

As I argue here and in the next section, Kofi Annan or any UN Secretary-General is likely to resist classical scientific discourse in UN peace operations discourse because of the way the organization transfers information and learns. UN learning processes incorporate testimony from individuals who work on the ground in community settings. This has a tendency to counteract modernism and abstract models in favor of village level variables.

UN learning processes benefit from an organizational structure that can translate complex, social information through a small number of individuals to decision-makers. Nominally, the head of a UN peace mission reports directly to the Security Council but in practice they do so through the UN Secretary-General. A representative of the Secretary-General administers the mission and directly oversees the various departments of the mission. The representative of the Secretary-General thus receives immediate information on human rights violations and the security situation. It is also significant to note that the “experts” listed in UN mission organizational charts are typically “National Legal Experts” or “National Security Experts.” The only access economists and other more “scientific” experts get is through the UN country team which includes officials from the UNDP, WHO, ILO, UNICEF, and other organizations.

\[125\] UNIPSIL Organizational Chart.
In short, the transmission of the kind of detailed, on the ground information laid out in the officers’ report above is only a few steps removed from the Secretary-General’s Special Representative on the ground. This representative in turn reports directly to the UN Secretary General. These personal links to the very top of the organization permits intersubjective knowledge to travel through the organization. In other organizations, only by being reduced to simplified representations can ideas travel. In the UN, complex ideas can travel through personal relationships and facilitate learning from the ground up. This abstraction, as I explain below, can lead to learning pathologies.

Documents show the learning process of the UN in action. In a 1997 report on the civilian police operation in Bosnia, two criminologists presented the results of a series of qualitative, open-ended interviews with the commander of the mission and a number of the officers who served under him. The report offered an analysis of the problems of civilian police monitoring that remains close to the concerns of everyday people and the idiosyncrasies of local conditions. The revealed ontology is thus relatively thick, as the officers emphasize the importance of building and maintaining the trust and confidence of ‘the people’ to the success of their operations. Moreover, the officers maintain a strong commitment to personal standards of justice. At one point, the commander of the mission defends a dubious interpretation of his mandate (on which he “investigated” human rights abuses as opposed to simply “monitoring” them) with a moving and personal statement of purpose: “someone has to care for the dead, someone has to speak for the dead, and we are civilian police, and our main role is to care for the people, living or dead.” This shows that UN learning processes carry the intersubjective experience central to peacekeeping and peacebuilding success. In depth first-person accounts and open-ended interviews allow officers to report on the importance of social bonds and emotions to success in these enterprises. This personal, in-depth experience discourages abstract, universal theories of success and failure and creates an appreciation for interpretive approaches to problem-solving.

Intersubjective content is able to travel from the ground to the UN Security Council via the Secretary-General. For example, in reports to the UN Security Council, the Secre-

129 Rubinstein 2005.
tary-General often comments on ethnic divisions and the threats they create:

The electoral process has divided the population of the [Biriwa-Limba] chiefdom along ethnic lines. The Biriwa paramount chieftancy fell vacant in 2002... Ensuing disputes between the majority Limba ethnic group, which had traditionally held the chieftancy, and the minority Mandingo ethnic group resulted in a prolonged period of heightened tension and violent protests that created security concerns.\footnote{S/2006/695, 3.}

Complex situations like this resist legible representation and are difficult to capture in “ethno-linguistic fractionalization” indices.\footnote{Fearon and Laitin 2004.} This kind of information must be carried in everyday language that preserves social relationships key to peace. Statements like this reflect a broad concern for the fluidity and complexity of the “context” in which peace operations work. One Peacebuilding Commission report made this point:

\[T\]he context in which a cooperation framework or a compact is developed is critical and influences all other elements... Therefore the Peacebuilding Commission and other international actors involved would need to avoid the application of “one-size-fits-all” templates and focus on developing context-specific cooperation instruments.\footnote{A/62/137-S/2007/458, 28.}

Here the invocation of context is linked explicitly to a rejection of one-size-fits-all methods. To the extent that UN actors recognize the complexity of the situation on the ground, they will tend to resist abstract, universal solutions.

Another theme that demonstrates an awareness of social complexity is the emphasis on confidence and trust. In a report to the Security Council, the Secretary-General suggested that the UN mission in Sierra Leone was crucial to maintaining stability because advisers there are helping the local police gain “the confidence and respect of the public.”\footnote{S/2008/281, 15.} This emphasis on creating relationships with the public echoes a common refrain.
of UN military personnel who argued that personal relationships with rebels were crucial to success. Major General Michael G. Smith, who served as Deputy Force Commander for the UN Transitional Administration in East Timor has argued that to succeed there, the military had to revise its “concept of operations, shifting its focus from directly contesting the militia to protecting the people and maintaining their confidence.”

Indian troops in the UN Mission in Sierra Leone also delivered early successes in peacebuilding by winning the goodwill of the townspeople and developing personal relationships with rebel commanders. It is clear in both these cases that force was also necessary to curbing the rebels’ ambitions; Australian and British military interventions, respectively, were central to success in East Timor and Sierra Leone. But force on its own cannot bring sustainable peace to a country; such a peace must be built on confidence between the parties and solutions to the underling social and economic causes.

It is clear that the Representative of the Secretary-General in UN missions spends a lot of time cultivating relationships with stakeholders. One 1998 report on Sierra Leone explained the work of the Secretary General’s representative:

[M]y Special Representative has consulted the resident agencies, funds and programmes on a regular basis and has instituted weekly United Nations coordination meetings... Moreover, a joint security committee meets weekly to share and assess information about the situation on the ground. UNOMSIL has also actively pursued close contact with representatives of civil society, including good working relations with local non-government organizations and participation in civic events, such as symposia and workshops.

The Special Representative personally meets with police commissioners and officers and maintains personal links to civil society. This gives the Special Representative direct ac-

---

134 Smith and Dee 2006, 442.
135 Traub 2006, 120.
cess to the social links and intersubjective connections that hold fragile post-conflict societies together, and which must be strengthened by peacebuilding processes if they are to be successful. These social ties can be carried by individuals through the UN bureaucracy because of the organizational structure of UN peace operations.

Resisting Results-Based Budgeting

What does explicit resistance to CSD in the UN system look like? What discursive resources are used to denaturalize scientific concepts? Explicit resistance to CSD is evident in a 2008 UN review of results-based budgeting. It explicitly argued that abstract, calculable indicators are neither possible nor desirable in UN peace operations. Results-based budgeting is part of a larger movement in the public sector bureaucracy toward “scientific management.”\(^{137}\) As such, it creates an opening for classical scientific ideas in peace operations discourse. It rests on assumptions about a mechanical world of causation and encourages the use of quantifiable indicators to design and evaluate missions. However, results-based budgeting has not had a great effect on UN operations or discourse.\(^{138}\) The Office of Internal Oversight conducted a review of results-based budgeting in the UN and concluded that it had not succeeded in changing the culture of the organization and its results were not incorporated into decision-making: “The metrics do not exist to systematically determine efficiency and effectiveness of the organization... the exercise of accountability is not cast from review of outcomes but from ascen-

\(^{137}\) Lipson 2010.
\(^{138}\) A/63/268. Cf. Lipson 2010, 273-74
taining that there is no negligence.”\textsuperscript{139}

Moreover, the report argued that it may be neither possible nor desirable for the UN to precisely measure outcomes. First, the report suggested that mandates and resolutions are “often vague and the determination of success does not lend itself to impartial, transparent and precise measurement.” Many reports “lack credible methods for verification and involve reporting that rests upon subjective judgement.”\textsuperscript{140} This failure is due to the fact that “[r]esults-based management is ultimately not within the powers of the Secretary-General to implement” because “[t]he “culture” of the Organization will not be changed by data collection efforts.” Thus, if results are not used in decision-making, “results-based management will continue to be an administrative chore of no real utility.”\textsuperscript{141} But the report went further, arguing that an effective results-based system may be undesirable anyhow because, “a formalistic approach to codifying how to achieve outcomes can stifle the innovation and flexibility require to achieve those outcomes.”\textsuperscript{142}

Most interestingly, the report exhibits an understanding of the tradeoffs precise indicators offer. On one hand, measurement allows for accountability and a concentrated effort toward achievable goals. On the other, identifying achievable goals narrows the goals of the organization and “[w]hat gets measured is all that gets done.”\textsuperscript{143} Goals become “standardized formulations” that “do not necessarily connect with the much more substantive expected accomplishments.” In short, bureaucratic actors often aim for measurable goals which track narrow achievements that may not correspond to out-

\textsuperscript{139} A/63/268, 2.
\textsuperscript{140} A/63/268, 2, 12.
\textsuperscript{141} A/63/268, 2.
\textsuperscript{142} A/63/268, 1, 11.
\textsuperscript{143} A/63/268, 12.
comes of interest. Besides, outcomes of interest are usually dependent on external factors outside of the control of UN agencies.\textsuperscript{144}

As the Internal Review would have us expect, other documents show that peace operations are often evaluated using vague targets that do not fulfill the criteria of results-based budgeting. The “expected accomplishments” report of the UN Mission in the Democratic Republic of the Congo lays out goals of varying precision. On the one hand, it aims to achieve a “stable security environment” and “disarmament, demobilization and repatriation” which are sensible goals for a peace operation. On the other, it aims to achieve “progress in institutional development,” “reform of the security sector,” and “stability in the functioning of the post-transitional Government.”\textsuperscript{145} All of these present significant methodological difficulties; establishing a baseline and creating indicators of “reform” are contentious tasks. However, these kinds of difficulties would be unlikely to stop an organization with considerable bureaucratic resources and a modernist culture driving it to quantify and control outcomes. However, the UN does not exhibit this tendency. As we shall see in the next section, this is a result partially of UN culture and capabilities, but also because of the features of the task environment that resist efforts to represent it in an abstract form.

\textbf{Justifying Economic Goals}

One unexpected effect of these close connections to the “situation on the ground” is that economic goals are not justified or naturalized via links to scientific and technologi-
cl progress. Instead, they are connected to core peace and security concerns. In one report, the Secretary-General argued that “[a]ccelerating economic growth remains the key to addressing the continued marginalization of large segments of Sierra Leone’s population, in particular the youth and rural communities, and is furthermore a central component of the Government’s poverty reduction programme.”\footnote{S/2006/695, 15.} Thus, economic growth is connected to the idea that “[e]ndemic unemployment among young people is a challenge to the stability of the country” because it is one of the “root causes of the past conflict” and “current threat.”\footnote{S/2010/471, 12; S/2006/695, 11. Cf. S/2008/281, 2.} Elsewhere, economic growth is connected to “[p]overty reduction” and “[f]ood security.”\footnote{S/2006/695, 10.} This shows concern for the real needs of individuals that is reinforced by the fact that UN observers are embedded in the real lives of individuals.

There is a danger, however, that the economic development discourse may lead to means-ends changes in the long run. On the one hand, the rise of the economic discourse in peacebuilding reveals the influence of economists like Paul Collier who have argued that the main risk factor in post-conflict situations is the economic incentives of the rebels.\footnote{Collier and Hoeffler 1998, 2004. These papers were written during Paul Collier’s time as Director of the Development Research Group at the World Bank.} This argument rests on a thin ontology and offers a technical solution to post-conflict problems reminiscent of liberal utilitarianism in colonial thought and neoliberalism in development discourse: introducing markets will solve all social problems. A market-based strategy rooted in a thin ontology risks leaving the ethnic divisions and
social problems that underlie conflicts unaddressed, only to re-emerge later.\textsuperscript{150} On the other hand, the concern with economic growth is certainly not modernism for modernism’s sake. Economic growth remains connected to real lives and tangible peace operations goals. As such, the focus on economic growth will probably be good for peace-building in the short-run.

Moreover, UN officials often link goals not to scientific and technological concepts, but to “collective agreement.” One Secretary-General report grounded UN goals in widespread adoption of UN standards and norms:

The normative foundation for our work in advancing the rule of law is the Charter of the United Nations itself, together with the four pillars of the modern international legal system: international humanitarian rights law, international humanitarian law; international criminal law; and international refugee law… These represent universally applicable standards adopted under the auspices of the UN and must therefore serve as the normative basis for all UN activities in support of justice and the rule of law.\textsuperscript{151}

Thus, these standards “bring a legitimacy that cannot be said to attach to exported national models.”\textsuperscript{152} Consider that, in general, arguments for universals are easily legitimated by reference to nature or objective scientific criteria. However, that is not done here. Instead, universals are legitimated with reference to an episteme and ontology that privileges agreement and adoption as the basis of values.\textsuperscript{153} This, on my reading, reflects the consensual basis of UN politics as a whole. Values and goals are not arrived at via deduction from first principles or offered by experts, but are arrived at through the process of dialogue and bargaining that is the \textit{sina qua non} of international politics. This provides a further safeguard from the creeping of modernism, until modernism itself

\textsuperscript{150} Paris 2004; Richmond and Franks 2009.
\textsuperscript{151} S/2004/616, 5.
\textsuperscript{152} S/2004/616, 5.
\textsuperscript{153} A similar tendency can be seen in A/54/549 and
forms the basis for agreement amongst the world’s powerful states.

**Scientific Trends in UN Peace Operations Discourse**

These sources of resistance notwithstanding, in 2010 and 2011 there are two scientific trends in the margins of UN peace operations discourse. First, biological metaphors are beginning to enter peace operations discourse. The emphasis on “complexity” and “learning” in the biological sciences seems directly applicable to the challenges of peacebuilding. The language of “adaptation” seems particularly useful. One civil society report on monitoring and evaluation argues that the peacebuilding community must develop “adaptive change processes”: “Ultimately peacebuilding aims to develop change processes that can evolve to meet the challenges of new conflicts, ensuring the continuity of peace writ large.” This means developing “the ongoing dynamic ability to meet new needs interests, and conflicts in a changing environment.”

Another scientific trend in the periphery of peace operations discourse is an increased discussion of Randomized Controlled Trials (RCTs). RCTs have recently been created in the economic development field, drawing on a tradition of thought in behavioral economics. Instead of assuming that humans act as “rational actors,” behavioral models argue that humans use heuristics to make decisions under considerable cognitive and informational limitations. Banerjee and Duflo have recently popularized the use of experiments in development projects. Their work has entered the peacebuilding civil society discourse. One 2008 article argued they offer “an objective and reliable as-

---

154 Church and Rogers 2006, 23.
155 Banerjee and Duflo 2011.
essment of the changes caused by a peacebuilding programme.” However, they “help the field understand the line of causality…and give counterfactual evidence.”

However, discussion of RCTs has not moved into central UN bodies. A search for “randomized controlled trial(s)” in the UN Official Document System from 1990 through 2011 yielded only 4 results. Nonetheless two pressures are likely to push this scientific technique in peace operations discourse. First, experts in the peacebuilding field will desire to defend their work and its importance with legitimate evidence. Since RCTs offer the promise of “proof” that projects work in the authoritative language of science, they will bestow considerable legitimacy on successful interventions. Second, demands for accountability from the donor community necessitate more and more careful measurement of project success in a competitive environment in which growing numbers of international and non-governmental organizations seek funding.

RCTs are certain to have some salutary effects on both development and peacebuilding projects. There are a number of dangers to be avoided in the use of RCTs, however. The case of the World Bank offers three cautions. First, the necessity of measurable goals and standards in experimental trials will introduce representational constraints in the way ends are conceptualized. Exact indicators may not map onto the actual goals and ends that peacebuilding experts care about, and they may not map onto successful standards. Second, the “micro” perspective demanded by RCTs will reduce the work and thought put into “macro” causes and macro solutions. This is the inverse of what

---

156 Svensson and Brattberg 2008, 24. They cite a 2006 Esther Duflo et al NBER paper on “Using Randomisation in development economics research.”
158 Two of these (E/CN.6/2012/11 and A/65/267), however, were in reports by the Secretary-General, demonstrating the rising influence of RCTs.
happened in the Bank during the 1970s and 1980s, when the macro perspective squeezed out micro interventions. Third, the introduction of more scientific concepts will accelerate the changes in the underlying episteme and ontology of the peace operations discourse. This will provide more resources for the naturalization of peace goals in scientific and technological terms. This creates the danger that modernist goals will be linked to modernist ideologies, eliding the concern with real lives and real individuals the peace operations discourse has thus far been able to maintain. Finally, the introduction of more “scientific” techniques to monitor and evaluate peacebuilding projects will allow actors to delegitimate and exclude other methods of analysis and evaluation. This may make it difficult for social and intersubjective factors to retain their important position in peace operations discourse.

V. CONCLUSION: LEARNING AND LEGIBILITY

Between 1990 and 2010 UN peace discourse broadened to include peacebuilding missions premised on the idea that societies could be constructed. This idea is now institutionalized in the core institutions of international politics. Considering that “society” was only constituted as a scientific object in the early 20th century, this marks a major achievement for scientific and modernist discourses.

However, as we have seen, UN peace discourses exhibit ambivalences. On the one hand, the shift from peacekeeping to peacebuilding incorporated a rationalist and modernist vision. The goals of peace operations shifted from monitoring and defending a ceasefire to building institutions and consolidating peace. Technical language has entered and trends like results-based budgeting and randomized control trials threaten to
accelerate changes. Issues in peace operations are defined as problems that demand expert solutions.\textsuperscript{159} There are calls for more objective knowledge and analysis.\textsuperscript{160} UN missions take place against a tacit universalistic backdrop on which the same institutions will have the same effects in all societies.\textsuperscript{161}

On the other hand, abstract, generalizable knowledge is resisted. Economic goals are linked to explicit outcomes at the local level and play a moderate role in policy. While official policy documents reveal calculable and rationalist epistememes and thin ontologies, operational documents retain a focus on relationships, confidence-building, and other social factors. Finally, the articulation of a commitment to universal goals rooted in collective agreement rather than in natural or scientific categories shows that resistance to CSD is strong.

Explaining Means-Ends Change

The resistance of peacekeeping and peacebuilding to CSD is puzzling when compared to the case of the World Bank. Why has peacebuilding and peacekeeping been able to resist scientific means-end capture? My argument is that the organizational structure of the UN allows it to maintain learning processes guided by direct, qualitative feedback from on-the-ground peacekeepers and peacebuilders. The social knowledge from these sources disrupts CSD and its negative effects on organizational learning. The Bank, on the other hand, is susceptible to legible representations that abstract from local contexts. But first, I want to address some alternative explanations.

\textsuperscript{159} This offers cautious support for Buhta’s claim that peacebuilding is a domain of ‘techno-politics.’
\textsuperscript{160} This corroborates the main thrust of Sending’s argument.
\textsuperscript{161} Sending 2009, 8.
First, one might argue that the main difference between the World Bank and the UN peace operations is that the former was dominated by an epistemic community of economic scientists.\textsuperscript{162} This is certainly part of the story. Since economists have internalized classical scientific discourse, they employ general theories to ordered, quantitative ends as a matter of course. However, I am not convinced that this account is complete because it does not explain why administrators and experts are empowered in the economic domain but not in other domains. That is, it does not explain why the World Bank is able to make its environment subject to scientific manipulation and why its learning process fails to ensure that substantive outcomes on the ground are carefully monitored.

Second, one could argue that the UN is subject to constant criticism and so is an unusually reflective organization that is always trying to engage its critics and learn lessons. Means-ends change is prevented because many actors participate in the legitimation and naturalization phases of institutionalization. This disrupts the power of legible representations and denaturalizes taken-for-granted assumptions. I think this is an important factor, but it cannot explain all the variation in outcomes because the World Bank is also subject to this kind of scrutiny and it has used scientific discourse to defend itself in these fights.\textsuperscript{163}

I think the difference in the learning processes of the two organizations can be accounted for by their differing organizational structures and abilities to represent and interpret their environments. For example, we saw above that the monitoring and evaluation procedures in the United Nations give individuals with on the ground experience

\textsuperscript{162} Chwieroth (2007, 2008) argues that professions dominated organizational culture.

\textsuperscript{163} Weaver 2008. That is, the scientific authority of the economists is part of the reason they are better to insulate themselves from criticism in the first place.
the chance to directly influence learning procedures. When local practitioners produce knowledge or expertise, that knowledge is less likely to become universal, ordered, and reductive. Above, I argued that this kind of knowledge can make a difference in an organization like the UN because its organizational structure allows it to transmit intersubjective knowledge up the chain of command to the decision-makers. Together these two factors point to the organization’s representational abilities as a central component of successful learning processes.

What are the factors that contribute to an organization’s representational abilities? In chapter 2 I suggested that these factors were a product of both organizational discourses and characteristics of the environment the organizations are trying to intervene in. The World Bank and the UN face very different environments with very different ontologies and representational tools. Why are Bank representations captured by CSD? Why are they more legible? On the one hand, it seems that the subject of World Bank analyses, the economic well-being of individuals, is just as amenable to qualitative interviews and moving statements from Bank officials. On the other hand, the medium of money provides an abstract and readable representation of that complex social and material reality. Human consumption and exchange can be understood easily by economists because money translates the blooming and buzzing confusion of life into price information. The circulation of money is easily quantified and plugged into abstract models. Thus, World Bank officials can test their theories and models against economic data stripped of its subjective and intersubjective meanings. This enables impersonal universal models to drive the learning process and encourage the maximization of quantitative ends. Quantitative indicators are then legitimated, setting off processes of value formation and natu-
ralization.

By contrast, peacebuilding officials must confront real people and real guns. The reality guiding the ends of peace operations are only as far away as an interview with those affected by war and strife. When this reality is translated into “data” for analysis and learning, it retains a strong connection to the human impact of war and community involvement in restoring order and security. This data is mediated by and carries the subjective experiences of real people. On this view, the absence of contextual, intersubjective feedback between outcomes and planning drives means-ends capture in the Bank. One way of characterizing this difference is to say that the environment the Bank tries to represent allows CSD to dominate the organizational ontology because it is more legible and thus more amenable to scientific analysis and manipulation. It is simply harder to translate peacebuilding reality into abstract theory. In the Bank, the legibility of monetary interactions empowers experts who are removed from the on-the-ground realities of the situation. In peace operations, the social bases of peacekeeping and peacebuilding are harder to translate into simplified representations. This resistance by the characteristics of the environment is reinforced by the organizational structure of UN peace operations which empowers people with personal links to environment. This helps prevent expert capture and infuses UN peace discourse with social and liberal concepts.

164 Recent civil society literature on peacebuilding evaluation picks up on this in a way, arguing that evaluation of peacebuilding must be done relative to a normative standard that is not entirely quantifiable, though common standards should be possible. See Scharbatke-Church 2011.
Implications: Material Reality and the Limits of Social Construction

My argument could provide a new way to theorize the relationship between material and social reality. My argument here is that the economic domain is more amenable to scientific discourse because money is more legible than the roots of collective violence. We might be tempted to see this as a corollary of the fact that money is a “material factor” and conclude that since material factors have inherent features that resist social construction, the effects of money on organizations is determined.

On my view, we should be careful not to interpret my analysis to mean that the legibility of economic reality is a natural fact. Rather, I think it shows that what social scientists often refer to as “the material world” is itself a product of interaction between brute facts and social facts. Money captures material motivations, but is upheld by the social fact of agreement that money stands in for value. Money is embedded in larger economic systems, such as the gold standard and global financial markets that are also constituted by both material and social factors. Money economies in turn are supported by social conditions that naturalize profit-seeking and consumerist behavior.

So money itself is a hybrid social-material entity. Moreover, the way money is incorporated into organizations is in turn shaped by discourses and techniques that govern representation. In Western society, scientific and technological ideas with representational constraints dominate institutional environments. This alters the way money and economic indicators are used in these institutions. These representations provide the central interface between environments and political action. New theory could focus on

---

165 Mitchell 2002.
166 Polanyi 1944; MacKenzie 2006.
the interface between an organization and its environment to understand in a more precise way Wendt’s insight that material reality is always interpreted and shaped by ideas. This would provide an empirical challenge to functionalist arguments that “black box” these complex interfaces and social processes to argue that environments determine organizational features. Functionalist hypotheses, whether driven by interests or power, tacitly depend on assumptions about what happens at this interface and functionalist theories are incomplete without an account of it.

The legibility framework also highlights a potential area for further theoretical and empirical research. My analysis here shows that some environments or realities are clearly more susceptible to social construction than others. Between a post-modernist optimism about the potential for social construction and a naive materialist determinism, there must be a number of middle positions that can be theorized. The study of science and politics is a fruitful ground for this kind of analysis because scientific discourse is better suited to transforming certain domains.

**Implications: Peacebuilding Policy**

Social factors are still central to peacebuilding discourse, but economic and scientific concepts are rising in influence. There is still the possibility that social scientists will design legible representations of peacebuilding that gain traction in UN policy circles. Scott’s study of early modern states shows that persistent and powerful actors can make that reality visible and manipulable by outside experts, with potentially disastrous ef-

---

167 Wendt 1999.
168 E.g., Koremenos et al 2001. See Wendt 2001a and Thompson 2010 for critiques along these lines.
170 See Diehl and Druckman 2010 for a recent attempt.
fects. Such representations would empower experts and allow the UN to intervene with greater power in the daily habits and work performance of its officers and the people of post-conflict societies. This introduction of neocolonial abilities to match the neocolonial ideologies of peacebuilding would be normatively problematic. Moreover, it may jeopardize the use of social factors so central to peacebuilding success. Finally, any attempt to legibly map society is at risk of encouraging rationalist and modernist interventions.

To avoid the pathologies associated with means-ends change, peacebuilders must resist the push for quantitative performance indicators and foster practices that generate qualitative, intersubjective feedback and encourage deliberation by diverse groups of people. Thus the solution to the problems of peacebuilding is not to empower a technical epistemic community that will rationally calibrate means and ends. My argument suggests that this form of technocratic policymaking fails on its own terms because the means we choose has important effects on the ends we desire. Moreover, epistemic communities are just the kinds of actors my theory predicts will fall victim to means-ends capture.

Of course, important political decisions should not be made in the absence of expertise. Instead of delegating to scientific experts, the analysis here suggests that we should incorporate their points of view into diverse deliberations. This prescription dovetails nicely with the normative argument that peacebuilding should focus on methods of

---

Scott 1998.

For example, one gets the impression from the report on the fall of Srebrenica that during the Bosnian crisis, UN officials spent too much time looking at maps that abstracted from the realities on the ground, and therefore attempted to manipulate technically what could not be done without additional ground troops. The maps made the crisis appear amenable to administration from afar, but this did not lead to success. See A/54/549.
transitional justice like truth and reconciliation commissions that encourage communication and deliberation. Barnett suggests that peacebuilding doctrine should move away from the shock therapy of liberalism to a republican “emphasis on deliberative processes” which creates “space for societal actors to determine for themselves what the good life is and how to achieve it.”

Drumbl argues that local participatory justice tribunals are the best institutions for dealing with post-genocidal society because the shame-based procedures generate therapeutic discussion throughout the community. These are calls for institutions that embody “practical knowledge” instead of knowledge infused by classical scientific discourse. In situations where the environment of interest includes the people and the social bonds that hold communities and societies together, scientific means and ends are inappropriate and risk distorting goals and values.

---

REFERENCES

Primary Documents

Documents were selected in two waves. First, I put all documents in the United Nations Peacekeeping Resource Hub online archive into a database and randomly selected a series of reports. I complemented this with important reports from the 1990s and early 2000s (An Agenda for Peace and “The Brahimi Report”). After this initial analysis, I manually selected documents that seemed important from my analysis and the secondary literature, including reading all Secretary-General reports to the UNSC on Sierra Leone. In the future, I plan to read all reports by the Secretary-General on Kosovo and other important peacebuilding missions.

Official United Nations Documents

All official UN documents are available at: http://documents.un.org/.


Peacekeeping Best Practices Documents

All documents below are available in the United Nations Peacekeeping Resource Hub: http://www.peacekeepingbestpractices.unlb.org/


Civil Society Documents

Many of these can be obtained from http://www.dmeforpeace.org/


Secondary Documents


Chapter 7

Conclusion
Alternatives to Classical Scientific Discourse

“[H]ow could there be social catastrophe where there was undoubtedly economic improvement? Actually, of course, a social calamity is primarily a cultural not an economic phenomenon that can be measured by income figures or population statistics.”

– Karl Polanyi

I. THE RISE OF SCIENTIFIC AND TECHNOLOGICAL PROGRESS

I have argued that classical scientific ideas have transformed the international system over the course of the last 450 years. Moreover, I have argued that scientific ideas are not mere means to our ends: they shape the way political actors think about and pursue goals. Classical scientific discourse (CSD) entered international politics via powerful states in the 17th and 18th century, but over the course of the 20th century, it became embedded in international institutions. Subsequently, these international institutions have spread these ideas the world over. Scientific ideas now form the basis for policy discussions in all major states and international organizations and increasingly dominate the form and content of political goals and values.

My hope is that the case studies presented here add up to more than the sum of their parts. Individually, each case shows the process of means-ends change, bolstering my theoretical claims about how and why scientific ideas affect our goals and values.

---

1 Polanyi 1944, 157.
lectively, the cases lend credence to the claim that scientific ideas are constitutive of the international system itself. By showing means-ends change in a variety of institutions and time periods, the project also illuminates how the process of means-ends change unfolded at the level of international society as a whole. In a series of institutionalization episodes wherein organizations in international society import CSD which in turn changes the content of the global lifeworld that undergirds international politics.

The rise and global extent of these ideas has been well documented by the World Values Survey. The survey asks participants in countries all over the world, “In the long run, do you think the scientific advances we are making will help or harm mankind?” Participants may select “will help,” “will harm,” or “some of each.” Figure 7.1 shows responses in the world’s most powerful countries from surveys between 1990 and 2007. The data shows two things clearly. First, unqualified levels of faith in scientific advance are high, rising above 60 per cent by 2007 in most great power countries. Second, in eight of the nine countries, the faith in scientific advance is rising. Since the data is collected at the level of the masses, it reflects the deep penetration of faith in science into societies. Political elites are more likely to believe that scientific advance is beneficial than the masses because they are more likely to be educated in modern universities and to be exposed to the tangible fruits of science and technology. Lay people in these countries are less likely to hold modern beliefs such as the faith in science. If anything, the numbers in figure 7.1 understate the influence of scientific goals in an international soci-

---

2 The one exception, Russia, is interesting. The decline in faith is in part due to the collapse of the Soviet Union and its modernist ideology, which was rooted in scientific and technological progress (See Westad 2000 for a short review). However, it is in part due to the isolation of the Russian masses from the global hegemonic discourses (See Hopf forthcoming).
ety dominated by an elite class of individuals.³

My account of how scientific ideas change values has important implications for theories of change. First, fundamental transformations in political life are long-term processes shaped by cosmological ideas about what the universe is made of and how to cre-

³ The especially high levels of support in the U.S. may be hard for some to square with the finding that consistently high numbers of U.S. citizens seem to reject scientific findings on a whole host of issues. For example, 46% of Americans hold creationist views (Gallup 2012). However, this intuition rests on an assumption that religious values and faith in scientific progress conflict. I think these are separate issues and that many people who believe in creationism see no conflict between that view and belief in the efficacy of modern science.

ate knowledge. In the long run, cosmological ideas put constraints on policy discussions and political values. Second, change in large political institutions and societies is often unintended and indirect. Long-term change is of course socially constructed, contingent, and dependent on the actions of political agents. However, in the short run, the ability of political actors to control institutions and direct change is limited. As we saw in the case of the World Bank, McNamara attempted to refocus the Bank on poverty alleviation but unintentionally undermined that goal by importing restrictive scientific concepts and ideologies. In the case of British colonialism, Chamberlain attempted to create a more state-led policy of colonial development and was initially unsuccessful. However, Chamberlain initiated the process of hiring social scientists that would change colonial policy and fifty years later, his project was realized. It would be a stretch to call Chamberlain’s success a case of intended change. Instead, he set off an indirect process of change that worked because it harnessed the intellectual resources of the social scientists. If political actors are to exert collective control over long-term outcomes, they must attempt to control these indirect factors.5

Despite the fact that long-term processes of change are difficult to control, my account shows that intellectuals and thinkers are important agents in these processes. In the British case, anthropologists, political economists, and scholars of public health were central in shaping the foundations of colonial policy and its successors in postwar international institutions. In the World Bank, the discipline of economics drove a process of means-ends change with real world consequences for billions of poor people. The importance of social scientists in UN peace operations is increasing all the time. The influ-

5 I think of this as “steering” following Wendt (2001a, 2001b).
ence of social scientific ideas on international values and goals gives lie to the traditional separation of means and ends in the ideal of the social scientist as a neutral observer of the world. The effects of social science go beyond the obvious contribution to policy discussions: their representations of the world constrain policy options and goals in the short-run and shape the form and content of political discourse in the long run. Social science representations also legitimate some ways of seeing the world and downplay others. This has powerful effects on policy in the long run: the social sciences have contributed to the dominance of abstract, top-down, quantitative decision-making that all too often pushes organizations into bad policy decisions, neocolonial modes of rule, and learning pathologies that prevent corrections. They have spread the rationalist belief that the world can be controlled by reason and contributed to the taken-for-granted idea that scientific and technological progress is beneficial.

Of course, the social sciences are not the only group spreading CSD and variants of it. Discussions of natural scientific advance and technological innovation in the popular media also inspire these political elites to import scientific ideas. Moreover, the rising complexity of climate and natural resource issues requires political actors to become more familiar with the work of the natural sciences. However, social scientists play a key role in the constitution and maintenance of international society. They educate the political elites that lead governments and staff international organizations. Therefore, social scientists have become a central channel for the entry of CSD in political discourse. The means and ends of social science cannot help but have a profound impact.

By problematizing this role of the social sciences and the potentially negative effects of CSD on politics, I am not calling for an end to scientific knowledge in politics. Rather,
the critique of the effects of CSD should serve as the basis for reconstructing the role of experts and scientific knowledge in international politics. In the final section of the chapter, I advocate new modes of engagement between experts and political organizations. Social scientists should design institutions that are aware of the potential pathologies of CSD and work to develop alternatives where possible and guard against negative outcomes where necessary. I provide some alternatives to CSD and put forward some ideas about how organizations might seek to guard against the negative effects of means-ends change.

II. CHANGING ENDS: NEW VISIONS OF MODERNITY

The widespread faith in the power of science and technology to transform the world in beneficial ways has important effects on political goals and values. I have traced the rise of economic growth and demonstrated how it is linked to narratives of scientific and technological achievement. The goal of economic growth has become an expression of the desire to live a modern life filled with the baubles and trinkets of an advanced society. The rise of Western consumer lifestyles across the globe fuels the quest for economic development with one hand, while it draws from it with the other.

Economic goals also recall powerful biological metaphors of development and growth. In the modern era, development is an unquestioned good. Challenging it in public discourse is difficult to do because growth seems like part of the natural order of things. Moreover, since economic growth can be calculated and measured, it can be used as a concrete indicator of success for countless organizations in domestic and global

---

6 Wainwright 2008.
politics. As “scientific management” techniques become increasingly influential in public sector organizations, the pressures to import scientific discourses and representational constraints that naturalize growth and economic indicators will only increase.

While we take the value of economic growth for granted, it is normatively problematic for both moral and ecological reasons. For one, it may not map onto the substantive outcomes in people’s lives we care about. Economic growth measured in terms of Gross Domestic Product (GDP) is designed to measure all activity in an economy. Simon Kuznets first created the indicator Gross National Product to account for the total output of the American economy during World War II. It was not designed to capture well-being but the ability of a country to maximize the production of goods and services. Indeed, GDP includes not only good events, like imports and the provision of government services, but bad ones, like the expenses racked up by car accidents and natural disasters. Since all of these increase production, they are counted in the GDP, regardless of their normative value.

In organizations like the World Bank GDP is used to measure well-being by translating it into income per capita. This seems to do a reasonable job of approximating quality of life in a country. There are two basic problems with this. First, income per capita is an average, and so without some measure of inequality, it does not tell us much about the well-being of the population. A rich country could have a high concentration of wealth in the hands of the few, leaving the majority of the country well below the average income level. Second, and more importantly, income is an imperfect indicator of well-

---

7 Kuznets 1962. There was some debate about whether it should be used after the war ended, but it was in part because the Cold War necessitated a measure of output as a tool in the competition against the Soviet Union.
being in a normative sense. This is now the subject of a large literature following the groundbreaking work of Amartya Sen. Sen shows that income and substantive outcomes of interest can and do diverge. For example, black Americans have higher incomes than poor Indians in Kerala, but they have lower life expectancy. Sen uses examples like this to argue that what we should really value is human capabilities. In Sen’s view, a capability approach aims to remove “obstacles in [people’s] lives so that they have more freedom to live the kind of life that, upon reflection, they have reason to value.” A capability approach advocates a more complex set of indicators, including life expectancy and education levels, to complement income-based measures.

Sen sets the bar for human well-being high. Even if we consider less ambitious indicators, such as whether or not people report that they are happy with their lives, growth still does not reliably track well-being. Once countries reach an average GDP per capita of around $10,000 (adjusted for Purchasing Price Parity), self-reports of happiness tend to level off. Once that income level is reached, approximately 80% of survey respondents in many countries report they are happy with their lives. Beyond $10,000 per capita, higher income is not a good predictor of happiness levels in a given country. In the end, economic indicators like income cannot capture what makes a life good. Of course, basic material needs must be met, but so too must psychological needs for solidarity, relatedness, meaning and so on.

Moreover, as Polanyi points out, economic indicators cannot represent ongoing social calamities. He argues that the problems wrought by social dislocation in both rural

---

8 Sen 1999.
9 Robeyns 2005, 94.
11 Kasser and Ryan 1996.
England and the colonies were covered up by economic statistics in the hands of revisionist liberal historians:

Nothing in the nature of a sudden deterioration of standards, according to these writers, ever overwhelmed the common people. They were, on the average, substantially better off after than before the introduction of the factory system, and, as to number, nobody could deny their rapid increase. By the accepted yardsticks of economic welfare—real wages and population figures—the Inferno of early capitalism, they maintained, never existed; the working classes, far from being exploited, were economically the gainers and to argue the need for social protection against a system that benefited all was obviously impossible.\(^\text{12}\)

Liberal historians tried to overturn the horrors documented by a “galaxy of poets, thinks, and writers” with statistics abstracted from the ongoing social calamity. If economic indicators hide social dislocations and declining standards of living they can actually have a negative influence on outcomes. Since economic indicators have more scientific authority, they are likely to be more influential than the eloquent documentation of poets and thinkers. To Polanyi, this seems wrong: “Who, for instance, would care to deny that a formerly free people dragged into slavery was exploited, though their standard of life, in some artificial sense, may have been improved[?]\(^\text{13}\)” Economic indicators may not track substantive outcomes of interest, and they may also mislead us by demonstrating “progress” in the midst of social upheaval and exploitation.

GDP is also a problematic policy goal because it may conflict with environmental goals. In the short-run, the growth imperative makes climate negotiations difficult because countries are unwilling to sacrifice economic growth. Carbon taxes and cap-and-trade schemes will inevitable raise the price of fossil fuels with knock-on effects for almost all goods in society. Since political leaders are unwilling to pass on the costs of

\(^{12}\) Polanyi 1944, 156.

\(^{13}\) Polanyi 1944, 159.
strong action onto consumers and corporations, they refuse to carry out serious reduc-
tions. In the long run, economic growth encourages the use of increasingly scarce re-
sources that cannot support infinite economic expansion.\textsuperscript{14} Economists have long argued
that growth and resource use could be “decoupled” because efficiency increases and
improved recycling techniques would reduce the material impact of economic produc-
tion. In practice however, increases in efficiency have translated into increases in con-
sumption which remains resource and energy intensive.\textsuperscript{15} Housing, cars, air travel, ap-
pliances, and electronic devices all depend on non-renewable material resources.

At this point one might concede that economic growth has its problems but make
two moves. First, one could dispute the role of scientific and technological ideas in bol-
stering growth. After all, there are good reasons for states to pursue growth in the ab-
sence of scientific ideas. Growth oriented policies maximize power and help to deliver
benefits to voters and elites that support rulers. Second, one could thereby conclude that
the problems with economic growth are simply imperfections in an inevitable policy
that we cannot do much about. If growth is a necessary end of modern politics, the criti-
cisms offered here are moot. Is there any alternative to the growth imperative? Is it not a
natural and inevitable goal of modern states?

We might expect the growth imperative to be inevitable if its causes are unavoidable.
There are political, economic, and ideological motivations to pursue economic growth.
Purdey argues that to explain the growth imperative we must take up a Gramscian per-
spective that includes both material factors of production and ideological factors to ex-

\textsuperscript{14} Daly 1996.
\textsuperscript{15} Røpke 1999, 404-05; Turner 2008.
plain the rise of growth in modern societies. Homer-Dixon argues that capitalist economies need growth to replace the jobs displaced by technological advances. Wendt has suggested that the origins of the growth imperative may lie in the *form* of the capitalist state itself. The role of scientific and technological techniques and narratives of progress, I have argued, are also important factors.

Even if the growth imperative is undergirded by a variety of economic and ideological factors this does not mean it cannot be challenged, weakened, and changed. We do not need to eliminate growth altogether to focus on alternative priorities that deliver significant political, social, and environmental benefits. If economic growth was simply one consideration among many, then political actors could carefully consider the trade-offs of pro-growth policies, and perhaps sacrifice growth to other things we value such as well-being and the environment. But is not some version of a growth-based economy necessary? If the underlying causes of growth policies are economic or material they could be immune to challenge. This is only a concern if Marx was right and economic conditions determine the outcome of society in a strong way. There is little reason to believe this is true. As Mitchell has pointed out, even economies are constructions. They are not “natural” material conditions; rather, they have been made by practices that weave together ideas, institutions, and techniques into complex social wholes. While creating new constructions that weave together ways of life, economic exchange, and meaningful cosmologies will be difficult, they are possible.

A challenge to the material and ideological underpinnings of growth-oriented eco-

---

16 Purdey 2010.
17 Homer-Dixon 2006, 193-203.
18 Wendt 1999, 236.
nomics must begin by making good arguments against economic growth in public discussions, even if the project must proceed to material and practical projects in the long run. However, the argument here suggests that growth will be difficult to displace because it taps into deep narratives about progress and development at the core of modern cosmologies. Therefore, in the long run a successful comprehensive challenge to the growth imperative must be rooted in a new way of understanding the history of science and technology and their role in social life. While it seems daunting, this is a call for a new definition of progress that takes science as it is, without valorizing it. Instead, we must valorize human well-being and basic needs alongside the manifold ways in which complex social institutions can meet them.

III. CHANGING MEANS: ALTERNATIVES TO SCIENTIFIC PROBLEM-SOLVING

Ultimately, these movements for change depend on identifying and actualizing an alternative model for problem-solving. That is, to change ends we must change means. Creating new means to solve complex problems will help to institutionalize new values and goals in political institutions. These new means must be grounded in alternatives to classical scientific problem-solving.

One alternative model could be based on “practical knowledge.” Where classical scientific discourse is universal and abstract, practical knowledge is contextual and grounded in specific problem contexts. Where scientific discourse privileges calculable, quantitative ends, practical knowledge continually questions means and ends in a delib-

20 The first step then is the kind of ideological critique and denaturalization that my history provides. Engaging in ideological critique helps to change discourse, which helps to open the possibility for political change of the material conditions.
erative process. Scott argues that a “step by step “muddling through” approach” based on practical knowledge is better equipped to help plan and create successful social orders. Such an approach can absorb the complexities of social context in an ongoing learning process. When problem-solving eschews thin, oversimplified representations and grounds itself in social conditions and experimentation, complex problems that meet social needs without disastrous outcomes can be resolved in local contexts without outside experts.

This is an important insight, but a call for more practical knowledge on its own is an inadequate response to the rise of classical scientific discourse and its pathologies in international society. Practical knowledge must be made politically relevant through applications to concrete problems. The analysis in this dissertation makes this task seem more manageable, if no less challenging. I have argued that the basis of international change is institutional change. Thus, practical knowledge will be an important alternative to CSD only to the extent that it is institutionalized as a workable method in international organizations. This task of changing global public policy raises two questions. First, how can the call for practical knowledge be translated into concrete institutional problem-solving procedures? Second, how can these institutions be changed so that they are receptive to learning procedures rooted in social context?

To get started, let us return to evidence from the empirical cases. In the World Bank case, abstract, simplified representations of reality constrained the way goals and ends were measured. The goal of economic growth was an ideal solution in systems of mac-

---

22 Richardson 1994.
23 Scott 1998, 328.
roeconomic, quantitative analysis. Growth was then connected to narratives of scientific and technological progress that made growth seem natural and inevitable. When growth did not deliver improvements in the well-being of people in the global south, learning processes were short-circuited by a system of analysis that relied on abstract, macroeconomic indicators. These statistics told economists what they wanted to hear without considering how everyday people in the affected countries and villages felt about it.

The British colonial case, on the other hand, demonstrated that social science does not always abstract from the lives of real individuals. In the colonial case, careful, on-the-ground social science gave lie to the assumptions of liberal, *laissez-faire* imperial doctrine. Social scientific research revealed that commerce was not improving the well-being of Africans and Indians in the colonies. It showed that they did not naturally desire to sell their labor for wages and that forced labor was necessary to increase economic productivity. Social analysis argued that extracting Africans and Indians from the indigenous social conditions and institutions destroyed by colonial rule caused widespread suffering and dislocation. This argument was made possible by the thick descriptions of anthropologists and sociologists who lived for months and years amongst the African people. On the one hand, this should be recognized as social scientists serving an important critical function. On the other hand, it should be recognized that the social sciences were nonetheless steeped in racist, orientalist, and modernist views that privileged Western solutions to problems created by callous Western imperialism.

The contrast between these colonial and World Bank cases demonstrates that social, embedded forms of knowledge provide more insight into the well-being of individuals than abstract, simplified representations. But the two cases also show that practical
knowledge on its own is not enough to resist the modernist idea that all peoples should pursue Western scientific and technological progress. In the end, British social science was rooted in evolutionary narratives and theories of society and so naturalized moving through the stages of progress. We must find ways to employ social science that does not naturalize modernist goals or succumb to neocolonial and undemocratic modes of governance.

The analysis of UN peace operations helps us to see how institutions can denaturalize modernist goals. There, practical learning disrupts the rise of scientific discourse in UN peace operations. The collection of information about missions is carried out, for the most part, by officers on the ground and practitioners with in-depth contextual knowledge of the social and political environment. Since these officers are only a few degrees removed from the Secretary-General of the UN, complex social and political information can travel through the chain of command to the decision-makers. No expert class or legible representations intervene in this learning process and practical knowledge maintains a central role. As a result, goals are calibrated to the situation on the ground, rather than to abstract models.

How can we move from my analysis of political institutions to general lessons for the management of scientific discourse in international society? What institutionally concrete lessons can be extracted from these cases?

New Representations: Developing Practical Knowledge

The first lesson is that if experts are necessary to the functioning of an institution at least some of these experts should be steeped in the social and economic context and be
in a position to translate practical knowledge into problem-solving. Institutions will be in a better position to resist surreptitious changes in their value systems and goals if they remain connected to the lives of the people their policies address. The best candidates for this role in the social sciences are anthropologists. The ethnographic method steeps the analyst in the cultural and practices of real communities and gives her a deep appreciation for the intricate structure and play of social situations.

If institutions like the Bank hired large numbers of anthropologists it would have two effects. The work of anthropologists would provide alternative representations of social reality that would complement and denaturalize the ordered, abstract systems favored in classical scientific discourse. During the 1980s, for example, anthropological analysis uncovered the real social effects of structural adjustment and macroeconomic programs. Second, it would change the culture of the organization, to make it more contextual and less abstract. This would help create a means-ends dynamic in which new ends would circulate and compete with goals like economic growth. Since the late 1980s, the Bank has, of course, hired many anthropologists. But their voices are largely marginalized in the organization as a whole and they do not occupy positions of power which would enable them to have real effects on the bureaucratic culture as a whole. If anthropologists were given real positions of power, they may diversify the available means and ends of the organization.

A call for alternative forms of analysis is not an argument against the use of science in toto. Indeed, anthropological methods include many practices one could recognize as scientific. Ethnography is deeply empiricist and aims to document social facts via obser-

---

vation and testing. Anthropology diverges from classical scientific discourse by renouncing generalization and abstract, ordered representations. Nor should anthropologists completely displace social scientists that deploy classical scientific discourse in their problem-solving techniques. After all, anthropological methods are likely to have pathological means-ends distortions of their own. Instead, institutions like the Bank should foster a diversity of means which in turn cultivate a whole ecology of ends. With multiple, viable, operational ends in circulation an organization would be less likely to naturalize one dominant goal at the expense of outcomes of true moral interest.

Other social sciences are seeking to become less universalist, abstract, ordered. A growing movement in public policy aims to develop interpretivist, cultural, and participatory method of policy analysis. A better public policy would also abandon the separation of means and ends to recognize that “because politics is grounded in disputes about the good life and the means of realizing it, policy politics by its nature centres on controversial ideas and beliefs about the best courses of action.” A cultural public policy would also recognize that social and political life unfolds within a web of meanings that must be part of the analysis. If more disciplines develop interpretivist policy and institutional analyses, this will go a long way to combating the dominance of rational choice theory and statistical analyses in the policy sciences. This will diversify the policy sciences and better prepare it for solving complex social and political problems.

The social sciences are not the only source for alternative representations. Literary and humanistic methods are a powerful source of critique and social commentary. Po-

\[26\] Fischer 2003.
\[27\] Fischer 2003, 26.
lanyi’s “galaxy of poets, thinkers, and writers” documented the horrors of the industrial revolution in defiance of statistical representations of economic progress.28 Literature and art captures subjective and intersubjective experience in a unique way. Policy makers and social scientists alike should recognize and harness the power of these accounts of the human condition. Again, these should not displace social scientific analysis, but be fruitfully combined with them to create more faithful and complete depictions of life.

Where abstract representations are necessary and particularly useful, indicators should seek to map onto reality in a faithful way. For example, Sen’s work has inspired the development of the Human Development Index (HDI). Advocates of HDI want to replace the use of GDP as a measure of well-being with a composite indicator that includes life-expectancy, amount of education, and income. To the extent that this more faithfully captures substantive well-being, it is an improvement. However, as I argued in the conclusion of Chapter 5, if HDI is reified and naturalized, what might have served as a powerful social and contextual indicator may be distorted and manipulated by the exigencies of bureaucratic incentives.

In the end, minimizing the distortions and pathologies of scientific discourse will not follow from well intentioned exhortations and better indicators. Institutions will only be able to guide learning and achieve substantive outcomes if they create monitoring and evaluation procedures connected to social and economic contexts. Thus, the long term solutions lie in the design of institutions themselves.

---

28 Polanyi 1944, 156.
Institutional Design: Changing Goals from the Ground Up

The search for new goals and standards must run onto the rough ground of political institutions. We must design institutions that are capable of conceptualizing and achieving alternative ends. Moreover, these ends must be made available for conscious deliberation and control.

Within existing organizations like the World Bank, the potential for conscious evaluation and control of on-the-ground policy is limited. These organizations are large, centralized, and top-down. Even reforms to make the Bank more decentralized, bottom-up, and participatory have foundered practically and normatively. Participation in the Bank only means that “stakeholders” for projects are consulted. These might be everyday citizens, but they also mean powerful corporations and developers. Participation primarily means “consultation,” or relaying information to stakeholders, rather than real deliberation that solicits genuine input from citizens and community leaders.

Structuring argumentation and communication among is key to creating organizations that denaturalize ends and remain focused on substantive outcomes of interest. Recent research argues that the best way to find good solutions is to maximize deliberative quality. Deliberative quality is a function of the diversity of the groups. Given this, the goal should be to create diverse groups of experts with different sets of representational constraints and make these diverse groups argue with one another to generate good policy. Any single group of experts is subject to its own means-ends constraints, but diverse groups of analysts employing a diverse set of means would promote a whole

---

29 Hong and Page 2004; Page 2007; Landemore 2012; Mercier and Landemore 2012.
“ecology” of ends and goals. Far from naturalizing inappropriate ends, such a policy-making process would help experts choose from a menu of indicators and goals to choose one that reliably tracks outcomes of interest. The ideal institution then would bring together interpretivist, statistical, historical, and rationalist perspectives under the conditions favorable to open deliberations.

But if we merely empower better groups of experts, we are still bypassing democratic choice and local control. Empowering unaccountable experts creates neocolonial modes of governance that impose goals and values on the communities they are designed to help. In some cases, scientific knowledge will help communities without the resources to obtain this knowledge on their own. The question is then how to deploy this knowledge in a way that does not smuggle in mean-ends change. In short, new models of expert governance must combine alternative representations of reality, deliberative quality amongst groups of experts, and democratic procedures of policymaking.

Exciting new governance experiments provide real opportunities to combine expertise and democratic deliberation in local problem-solving procedures. Warren and Pearse show how groups of randomly selected citizens can be brought together to solve complex problems that would normally be left to experts. The British Columbia Citizen’s Assembly brought together people from all walks of life to discuss proposed changes to the electoral system. The citizens listened to complicated proposals by political scientists, discussed the relative merits of each approach, and designed their own electoral system. This provides a model for how expertise can be incorporated into democratic,

---

30 In the Bank, for example, anthropologists typically run their own projects and are not forced to work with economists or other experts who would help them step outside of their own perspective.
31 Fung and Wright 2003; Warren and Pearse 2008.
bottom-up decision-making. Experts are not empowered vertically, but consulted horizontally by autonomous groups of decision-makers.

Fung and Wright have also collected examples of citizens addressing problems in their own communities. For example, participatory budget experiments in Porto Alegre Brazil devolve the power of the purse to local people. Citizens can participate directly in deliberations in their neighborhoods and directly elect a delegate to represent them at district and city-wide meetings. In Porto Alegre, this system is both effective and popular. Both designs offer the promise of political institutions that can effectively solve complex problems with little risk of cooptation by classical scientific discourse.

These experiments in democratic governance provide an alternative way to incorporate expert knowledge into political problem-solving. Moreover, deliberation amongst diverse groups of everyday people is more likely to denaturalize goals and make organizations reflexive. Because diverse groups of people draw on a wider store of reasons, deliberations in these groups will undertake wider and more thorough considerations of the means and ends at hand. Real democratic accountability can help prevent institutions from being captured by scientific representations that abstract from the substantive outcomes of interest.

Truly participatory institutions may also improve the social and policy sciences. After all, “the man who wears the show knows best where it pinches.” Moreover, direct interaction with citizens will force experts all too often “shut off from knowledge of the needs which they are supposed to serve” to engage closely with the wants and desires of

---

32 Fung and Wright 2003.
33 Baiocchi 2003, 47-52
34 Mercier and Landemore 2012.
35 Dewey 1927, 206.
communities. The social sciences would be well-served by collaboration with everyday citizens, both to ground their work in social contexts and to make their work more relevant.

Deliberative problem-solving institutions may not just create better policy. They may help bring into being the strong social ties that modern institutions have all too often undermined. By facilitating interaction and the exchange of reasons deliberative institutions build up a shared store of concepts and reasons that can be used to solve problems in morally significant ways. The experiment in Porto Alegre has been linked to an increase in civil society organizations and created a network of experience activists who go on to work outside the governance system.36 Solving complex problems need not exclude or dislocate communities; it can help to build these communities.

One of the implications of my argument is that when individuals and organizations make choices about means, they are also making a choice about which kinds of actors and goals are going to be privileged. When agents make choices about how they are going to behave they are not just making choices about what to do but about who and what they are going to be. The same is true of institutions. Dryzek argues that this means our policy and design choices are actually choices about the world we want to create.37 For example, an organization that normalizes or encourages interest-based bargaining will tend to create self-interested negotiators and states. The cultural content of international society is a constitutive choice. It follows then that the way out is to design new institutions that will embed new values in the international system. In this way, in-

36 Baiocchi 2003, 58.
stitutional design can steer international politics in the long run.\textsuperscript{38}

We must also consider that our desire for control and our tendency to pose things as problems that need solutions is constituted by modernist ideas. In modernist politics, there is a persistent “will to improve.”\textsuperscript{39} Everything is a problem that demands a technical solution.\textsuperscript{40} In the end, we must be open to the fact that imperfection is acceptable, and that some problems do not need solutions.

\textsuperscript{38} See Wendt 2001b.
\textsuperscript{39} Li 2007.
\textsuperscript{40} Habermas 1970.
REFERENCES


References


George, Alexander L. and Andrew Bennett. 2005. Case Studies and Theory Development in


Mantena, Karuna. 2007a. “Mill and the Imperial Predicament.” In Nadia Urbinati and Alex Zakaras, eds. J.S. Mill’s Political Thought: A Bicentennial Reassessment. Cambridge: Cam-
bridge University Press, pp. 298-318.


340


Selznick, Philip. 1992. The Moral Commonwealth: Social Theory and the Promise of Commu-
University of California Press.


———. 2006. “Social Theory as Cartesian Science: an auto-critique from a quantum perspec-
tive.” In Stefano Guzzini and Anna Leander, eds. Constructivism and international relations: Alexander Wendt and his critics. New York: Routledge.