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Hammering Square Pegs into Round holes: International Development and the Flawed Ontological Assumptions of Modernity

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HAMMERING SQUARE PEGS INTO ROUND HOLES: INTERNATIONAL DEVELOPMENT AND THE FLAWED ONTOLOGICAL ASSUMPTIONS OF MODERNITY

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ABSTRACT

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Despite the increase in awareness of the plight of the third world and NGOs attempting to deal with poverty, international development projects continue to be alarmingly hit and miss. The problematic effectiveness of international development has led to an intense theoretical debate seeking to examine what exactly leads some projects awry. These criticisms often focus on the fundamental assumptions that underlie international development projects and occasionally relate them to the epistemological and ontological assumptions of modernity.

In this thesis, I use Heidegger and Nietzsche to deepen the criticism of the epistemological and ontological assumptions of modernity that in turn support the most common approaches to international development. Often these assumptions are so fundamental to western, scientific thinking that they are not apparent and left

unarticulated. By making the water the fish swims in more transparent to the fish, I encourage a more flexible, even “fuzzy” approach. The thesis thus seeks to undermine the confidence in the methods developed in modernity in order to replace the abstract models and harmful universal approaches with sensitive, local oriented development projects.

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INTRODUCTION

According to William Easterly (2007: 4), we are witnessing two tragedies related to poverty. The first is so well known it risks becoming cliché: the suffering of the poor. Everyone has seen the emaciated children in Africa, the hungry faces in Asia and the frustrated in Latin America. Easterly argues there is no lack of people, businesses and countries willing to help, trying to get rid of poverty. Governments, businesses and NGOs are all seeking ways to improve the condition of the impoverished. And yet, and this is the second tragedy, for all the "well-meaning compassion," development efforts can't seem to fix the problem. It is not a matter of a lack of awareness or lack of effort. As Easterly puts it: "This is the tragedy in which the West spent $2.3 trillion on foreign aid over the last five decades and still had not managed to get twelve-cent medicines to children to prevent half of all malaria related deaths" (2007: 4).

The second tragedy of poverty is that too much of the aid that is going to help is being mismanaged. Medicines end up on the black market, in the wrong hands, or lost in bureaucracy. Wherever it ends up, often it isn't getting where it needs to. And so, despite the great desire to help, the aid often doesn't arrive to the right people at the right time.

According to Easterly, there are two types of approaches to development projects and international aid: Planners and Searchers. Planners create a goal oriented plan that is implemented, often without adequate feedback and accountability (2007:15). Searchers don't use a plan at all. They enter a situation, attempt to understand it, and move forward with flexible solutions that are sensitive to local conditions. Planners tend to be academic and bureaucratic. Searchers are more akin to probing market researchers. Planners approach aid efforts like a "technical engineering problem" (2007: 6), while Searchers

take a more flexible approach that recognizes the complexity of the situation. “A Planner believes outsiders know enough to impose solutions. A Searcher believes only insiders have enough knowledge to find solutions…” (2007:6).

Not surprisingly, Easterly’s *The White Man’s Burden* aims to show the problems of the approach of Planners and to outline what can be done to encourage development projects to emulate Searchers and not Planners. *The White Man’s Burden* is subtitled: *Why the West’s Efforts to Aid the Rest Have Done So Much Ill and So Little Good*. While some might deny things are as bleak as Easterly implies, there is no doubt that much could be done to fix what he calls the second tragedy of poverty. Easterly is not alone in pointing out the problematic orchestration of development projects, James C. Scott argues something very similar in *Seeing Like A State: How Certain Schemes to Improve the Human Condition Have Failed*. Like Easterly, Scott (1998) argues that there are major problems in international development that are causing the disconnect between real, impoverished people and the planners who seek to help them. Easterly, however, is less interested in examining why there is a bias in Western thought that leads to favoring Planner approaches than proving that they are not working and offering pragmatic solutions. The last thing he wants to do is spend more time in the ivory tower debating how we got this way—an appropriate response given his purpose. Scott, on the other hand, does seek to examine the deeply entrenched assumptions about the nature of knowledge and reality that inform the Planner approach. His discussion implicates not only international development, but the social sciences more broadly. This is not surprising, as social scientists were those called on to help organize and implement many international development projects. Easterly seeks to fix international development. Scott

expands the argument and deepens it: social problems require a kind of practical knowledge that is currently undervalued in the social sciences and international development in favor of a Planner approach that problematically mimics the physical sciences. Like Easterly, for Scott, to improve both international development and the social sciences requires moving away from the kind of Planning methods to a more flexible approach that is sensitive to local knowledge. Such an approach requires a different epistemology and ontology.

Roughly the same argument was made 50 years ago about the social sciences. In 1959, C. Wright Mills (1959: 132) declared sociology was sick. According to Mills, the healthy comparative and historical sociology inspired by Marx, Weber and Mead had been gradually replaced by a "bureaucratic social science" engaged in human resource management. This was the same rise of the Planners in the social sciences that Easterly and Scott see still affecting international development 50 years later. Mills argues this "new practicality is an academic response to a greatly increased demand for administrative technicians who will deal with 'human relations,' and for new justifications of corporate business as a system of power" (1959: 96). Those in charge, Planners, recruited social scientists for what Easterly calls the "Big Plan" (2007: 18). The need for human resource managers flattered sociologists, lifting them from a nascent and marginal discipline to the lofty and powerful positions as scientific advisors to the king (1959: 180). Sociologists now found that they were in great demand to help predict and control.

For Mills, this amounts to an abdication by sociology of its social and moral responsibilities. Instead of the publicly engaged sociology of Marx, Weber and Mead, the bureaucratic ethos infiltrating sociology removes it from the public sphere into "non-democratic areas of society—a military establishment, a corporation, an advertising agency, an administrative division of government" (1959: 114). The bureaucratic ethos fits perfectly with the desire to emulate the natural sciences. It allows sociologists to focus on narrow problems (defined by the institution the sociologist is working for), isolate variables, and find solutions, and provides the prestige of working on the Big Plan. Unfortunately, under these conditions "social science itself often tends to become a functionally rational machine; the individual social scientist tends to lose his moral autonomy and his substantive rationality, and the role of human reason in human affairs tends to become merely a refinement of techniques for administrative and manipulative uses" (1959: 180).

Following Weber, Mills argues academics can no longer afford to naively accept the grandiose promises of science inherited from the Enlightenment: "Science, it turns out, is not a technological Second Coming. That its techniques and its rationality are given a central place in a society does not mean that men live reasonably and without myth, fraud and superstition. Universal education may lead to technological idiocy and nationalist provinciality—rather than to the informed and independent intelligence" (1959: 168). The social sciences become subservient to the undemocratic Big Plan and lose or never gain the kind of sensitivity needed to respond to local conditions that is needed for more effective development projects.

Mills wrote *The Sociological Imagination* to critique the rising bureaucratic ethos in sociology and to encourage a return to the historical and comparative roots of sociology. He hoped sociology would pull back from becoming the pseudo-scientific force supporting the status quo and return to its previous role as defender of democracy and servant of the public sphere.

Mills argues a bureaucratic sociology that emulates the natural sciences uses methods that are not always appropriate for certain social problems. Statistical analysis and the other tools of "abstracted empiricism" are often appropriate when dealing with small homogenous populations, but when dealing with large, heterogeneous populations, such methods can often cause more damage than good and represent the imposition of power rather than an accurate understanding of a situation. According to Easterly and Scott, this is particularly apparent in international development. Many of the early development projects that began about the time Mills was writing failed because they tended to assume an economic-rational human nature and took the nation as their unit of analysis. This didn't take into account the great variety of human motivations or the diversity in and across different nations. While these early failures led to a fierce debate that continues today, Easterly and Scott show these same bureaucratic abstracted empiricism approaches continue to be the most commonly used methods.

While Easterly focuses on the practical problem of switching to a more effective approach to international development, Scott and Mills both argue that overcoming the Planner approach requires understanding and overcoming the ontological and epistemological roots that serve as a foundation for the more bureaucratic Planner

approaches. Scott and Mills are not alone. These assumptions have been strongly challenged in the 20th century by philosophers like Nietzsche and Heidegger.

Alternative approaches to the study of international development, then, can perhaps best begin with the examination of those 20th century philosophers that strongly challenge the assumptions upon which most development work is based.

Heidegger and Nietzsche argue that modern science (and modernity more broadly) has taken over from the Greeks the erroneous ontological assumption that there is a true world, hidden by appearance, accessible to math and logic, that never changes—a world of being. This view assumes that there is a true core to objects that humans often cover up with various layers of meaning. A statue can be viewed as a religious object for veneration or, scientifically, as a material formed by molecules and properties which was then carved and imbued with an extraneous religious meaning. In what follows I attempt to show how contemporary scholarship on international development has often been structured on the assumption that the purpose of scholarship is to uncover the truth that underlies this world. If it is accepted that there is a universal truth about how things are, and if that truth can be discovered, it makes sense to develop both methods that will uncover that truth and a division of labor that will work on different aspects of reality. The academy becomes a giant mapmaking endeavor that seeks to model reality in mathematical terms.

Mills calls this the "strange block building endeavor" (1959: 65). Individual scholars "narrow the work to 'minute' investigations on the assumption that their findings can be 'put together' [in a way that leads to an] 'integrated social science'." Mills argues that many of the issues and social problems dealt with in sociology are simply too broad

and too complicated to be studied in this manner. It seems inevitable that narrowing the scope to such minutiae produces a bureaucratic sociology. Dealing with alternatives to the status quo require comparative and historical approaches. It involves developing what Mills calls “the sociological imagination” and what Scott calls “practical knowledge” or “metis” (1998: 309). It is also the kind of approach Easterly is seeking for when he calls for Searchers, the kind of approach that is sensitive to local conditions, flexible and not based on a predefined Big Plan. It is an approach that makes scholars feel uncomfortable precisely because it flies in the face of how the Western tradition has come to approach knowledge.

This plea for social science to return to a comparative historical sociology that functions as a public philosophy doesn’t mean that the now common abstracted empirical methods have to be thrown out. Both Jurgen Habermas and Robert Bellah have used them in combination with historical and comparative studies with an eye to encouraging and expanding the public sphere. Bellah argues the social sciences are increasingly turning into “evermore specialized…subdisciplines [that] often cannot speak to one another, much less to the public” (1996: 299). Like Mills, he thinks that this leads to “impoverishment of the public sphere” and must be counteracted with a return to the comparative and historical approaches that are now found in the humanities.

The twentieth century is replete with examples of the Big Plan failing. The danger of approaching social problems like a natural scientist would approach molecular interactions can be seen in the many attempts at development in the third world in the last 100 years. The staggering numbers of the poor sacrificed on the altar of progress (Mao’s

Great Leap Forward, which may have caused 20 million deaths, is the obvious example of botched social planning) should cause us to yield and reconsider how we approach social planning. How do you help a particular people solve social problems and leave behind underdevelopment without crushing them in the process? The moral compulsion driving this thesis is the continuing problematic nature of international development projects.

In Chapter 1, I examine how this approach has shaped the development projects of the 20th century. International development seeks to help countries that are "under-developed" improve. While there have been many successes, there also have been too many failures. The failures have produced a debate seeking answers about how international development should be done. These debates help to reveal the fundamental assumptions about the nature of knowledge and being and have produced suggestions about how such approaches need to be changed. Many of these suggestions center around the need to avoid the kind of broad, universal application of models that are produced by contemporary social science in favor of tentative models that are sensitive to local meanings and structures. I rely heavily on the work of thinkers like Scott (1998) to examine alternatives. Chapter 1 argues that the failures of international development are not surprising if understood within the context of the project of modernity.

Chapter 2, therefore, turns to the project of modernity. I use Comte to point out, in agreement with Neiman (2002), that the project of modernity seeks control. I examine how thinkers in modernity assume the world is like a giant machine that can be disassembled and reassembled though mathematics. I also use the discipline of history to illustrate the academic division of labor that makes up the project of modernity. The

division of labor has succeeded, however, less in producing a unified vision of reality than multiplying methods and interpretations of reality. This discussion serves to show both the ontological assumptions of modernity and the ironic situation that a system aiming to discover the underlying truth has instead produced a cacophony of ways of interpreting the world.

Chapter 3 uses Heidegger and Nietzsche to zero in on the ontological assumption that there is a deep truth to be discovered by scholars. Both Heidegger and Nietzsche challenge this assumption, and their work helped to inspire the postmodern rebellion. Chapter 3 is the most abstract section and seeks to overturn what I think is the most fundamental ontological assumption of modernity.

The task of chapter 4 is to examine the implications of this ontological reevaluation for the social sciences. There are different responses to the challenge set down by Nietzsche and Heidegger and I examine only a few. Ultimately, however, I am in favor of the suggestions given by Scott, Easterly and others. The suggestions in chapter 4, then, are further support for these conclusions.

CHAPTER 1: INTERNATIONAL DEVELOPMENT AND ITS DISCONTENTS

Scholars working with issues related to international development in the 20th century have seen many successes, but there have also been many failures. The failures in Latin America and more recently in Russia especially have led to a productive debate about how such projects should occur and reveal the need to rethink the fundamental assumptions of international development.

I begin by reviewing the three different schools of thought within international development: Modernization Theory, Dependency Theory and World Systems Analysis. I then describe the growing opposition to how development projects are approached and carried out. A pivotal work that sums up these criticisms is Scott's *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (1998). Scott argues that many of the massive projects carried out in the 20th century display a lack of sensitivity to local meanings and structures. By assuming the universality of certain "scientific" conclusions without recognizing the differences of particular communities these development projects were undermined. Scott argues for a new mentality surrounding these efforts that he calls mētis. This section finishes with a discussion of how these problems reflect the flaws of modernity.

International Development

Historically, international development must be understood in the context of the Cold War (McMichael 2000). The project of modernization began when the US moved quickly into Western Europe to reconstruct it after World War II. The Marshall Plan was an effort to keep Europe out of the orbit of communist Russia. As the threat of

communism spread to Asia, Latin America and Africa, the USA and now-reconstructed Western Europe moved to pull these countries into the orbit of the market system.

Despite a clear concern for the spread of communism, Western motivations for promoting development have been multiple and varied. State run development plans should not imply that self interest or humanitarianism have not played a role in the development of Europe and the rest of the world. After the initial political impetus, both business organizations interested in expanding to new markets and more humanitarian-minded organizations moved in to participate in modernization. When Western Europe had been largely rebuilt, modernization turned to the rest of the world which was just beginning to throw off colonial shackles. The motivations for such a move on the part of the US and Western Europe are by no means straightforward. There may have been some who were genuinely concerned for poorer nations, some who saw an advantage for US businesses, and others who wanted to fight communism. Even today the motivations behind the project of modernization run a long spectrum. These different motivations shape opinions about how to best bring about modernization.

Even with the best of intentions, however, international development projects have a record marred by some spectacular failures. The Tanganyika groundnut scheme in what is now called Tanzania failed miserably at a cost of £49 million to the British government (Myddelton, 2007). The green revolution caused a war in Punjab. The attempt to settle most of Tanzania's population (5 million were moved) into the *ujamaa* villages from 1973 to 1976 failed (Scott, 1998). Such failures should cause both NGOs and governments to pause and consider the financial pitfalls, and, more importantly, the human costs of such schemes. Hans Jonas (1984: 30) argues that our sheer technological

power, the fact that we can change human life, means that we need to develop a "heuristic of fear" that approaches that power with humility and caution, instead of wild utopian hope.

Many modernization projects did not (and do not) manifest a heuristic of fear. If anything, what they manifest is a strong faith in science and the human ability to comprehend reality. This kind of hubris is reminiscent of colonialists dividing up Africa and Asia with little regard for local cultures. Indeed, Scott argues that what he calls "high modernism" is the same pseudo-scientific ideology that has driven colonialism, communism, fascism and contemporary development projects.

The pretensions of Corbusier, the demolition of Pruit Igoe, the disorienting Brasília, the technocratic revolution of Lenin, the naïve invasions of Vietnam and Iraq, the continual problems in the Middle East and Africa caused by colonialism—the examples of scientific mismanagement in world affairs are legion. Why do such mistakes and problems seem to reoccur in such varied circumstances? For the NGO seeking to alleviate poverty, what can be done to avoid *hurting* the people the NGO seeks to help? While some of these examples, like the American invasions of Vietnam and Iraq, seem far removed from international development projects, there is a disturbing continuity behind all these endeavors.

The potentially problematic aspects of international development can be seen in the theory that informed many of the early modernization projects, namely modernization theory—especially in comparison with the criticisms and counter theories that arose as a result of early failures. Modernization theory placed all developing nations on a model of growth based on the historical growth of industrialized nations like the United States and

England. It was assumed that developing nations would move along a similar route. These assumptions, however, often failed to take into account cultural and historical differences. Trying to force developing nations into and through industrialization at such a quick pace while at the same time ignoring cultural difference divided many undeveloped countries and left them deeply in debt.

Modernization Theory: The Big Plan

The first major theory behind the project of modernization was simply called modernization theory. This theory was influenced by functionalism and the evolutionary approaches of Comte, Spencer, Tonnies and Durkheim (So 1990). Pulling from these traditions, modernization theory argued there was a sequence of steps the US and Western Europe had gone through to reach their current point. For modernization theory the task was to find out what these steps were and how to help other countries move along this trajectory faster. According to So (1990), modernization theory borrowed six assumptions from European evolutionary theory and three from functionalism. The process of Westernization, then, was said to be:

1. Phased - various steps can be distinguished and applied to different situations.
2. homogenizing – as we saw with the example of internal colonization above, standardization makes societies legible
3. Europeanization (or Americanization) – as with Hegel ‘s Prussia, modernization would make other countries like the US and Europe
4. irreversible – modern societies cannot reverse the process

5. progressive – modernity is better than pre-modernity
6. lengthy – change is not Marxist revolution, but gradual shifts

And from functionalism:

1. systematic – the parts of modernity come together like a machine
2. transformative – the norms and values of pre-modern societies are changed completely as they enter modernity
3. immanent – changes in one part of the modern machine affect other parts which adjust as needed to keep the machine functioning

Modernization theorists struggled to understand how to best help poorer nations modernize. If the process was not revolutionary but evolutionary, what could be done to help ensure that the process did occur (or began if it hadn't already)? Rostow argued there were five steps in modernization and that the pivotal middle stage is the "take off" stage (So, 1990: 29). If infrastructure is built up and enough resources and capital mobilized, a developing country can begin to grow economically faster than the needs of its own population and develop the kind of surplus that would allow it to enter the international market system. With the economy expanding at a rate faster than the immediate needs of the population, the country will "take off." The job of developed nations, then, is to provide the stimulus needed to get developing countries to take off and become self-sufficient.

The developed nations hurried into action. But things did not always proceed as planned. Latin America especially saw hopeful projects fail. Modernization theory now had to explain why various projects hadn't worked. Baran (1978) offered the explanation that developing countries could see the changes taking place in advanced countries. This

aroused hopes and envy, but impatience with the slow process (and the availability of communist alternatives) threatened revolution. The middle class, afraid of losing gains had already made, joined with the landed aristocracy to defend itself instead of rebelling against them as occurred in France, England and America. The lack of infrastructure discouraged those with capital from investing it in their own country and they settled for short term gains that did not improve conditions in their own country. The government did not have the capital, the competence, or the support of the wealthy to even approach the massive changes implied in the process of modernization.

Thus, the impediment to economic growth and social change in developing countries is an alliance between "feudal landlords, industrial royalists and the capitalist middle class" (Baran 1978: 108). This alliance, combined with nationalism and xenophobia, has produced a conservativism that preserves developing countries in a state of backwardness. Modernization theorists nonetheless insisted that nations like America, England, and France, which broke through their own defunct institutions, had to aid other countries that were struggling through these changes.

Dependency Theory

The mixed success of modernization in Latin America spawned a backlash in the late1950s and 1960s. Disgruntled intellectuals began to see hypocrisy on the part of richer nations and sought to rethink what modernization was really doing. Drawing upon Marx, they began forming an antithetical theory to modernization called dependency theory.

With dependency theory, the Marxist critique splits in two. Marx sees imperialism as (1) a source of misery, (2) the precondition for massive advance, and (3) something that must be overcome to obtain that advance (Brewer 1990: 55). Imperialism is a painful but necessary process. Countries stuck in the Asiatic mode of production (meaning they are not moving along Marx's teleological trajectory and are, hence, atemporal) need a little push. If colonialism is inevitable for a better future, then so be it.

But neo-Marxism rejects the Hegelian inevitability of colonialism. As a result, Marxist theories concerning the development of capitalism are divided into traditional Marxists who describe capitalism as a progressive and ultimately inevitable process leading toward socialism and neo-Marxists who see capitalism as a lecherous system where core states "progress" at the expense of peripheries, which are underdeveloped in the process (Brewer 1990). The first view recognizes the abuses of capitalism and seeks to push forward towards a more just socialist society, but insists capitalism is a stage in the process. The later view thinks more in terms of a zero sum game, where one going up means another going down.

Dependency theorists are neo-Marxists. They don't share the evolutionary perspective of modernization theory or traditional Marxism (So 1990). The relationship between periphery states and the core states is seen as a parasitic one. Thus for dependency theory, modernizing states are best served by keeping the core states out.

A representative argument is that of Andre Gunter Frank. Frank (1978: 114) argues "underdevelopment is not due to the survival of archaic institutions," but rather that the development of capitalism itself produces underdevelopment. Previous modernization theorists have favored the perspectives of the metropoles (the richer

nations and cities) and insufficiently addressed the history of the satellites (the periphery nations and rural areas). Policy decisions aiming to bring market relations to "feudal" satellites actually exacerbate conditions of underdevelopment. The metropoles are sucking the satellites dry, victims of the workings of the market.

This can be seen historically: when metropoles suffered through economic downswings, satellite areas begin to develop. When metropoles rebound, satellite areas again are pushed into servile relations with the metropole. Furthermore, satellite areas that served as major exporters of primary products for metropoles (such as India with England), still remain underdeveloped.

Note that the neo-Marxist dependency theorists challenge the assumptions of modernization theory, which are quite similar to those of traditional Marxism. From the list of assumptions of modernization theory neo-Marxist dependency theory challenges all those that are implicit in Hegelian, Marxist and similar evolutionary theories. For neo-Marxist dependency theory progress is not inevitable, progressive, phased, homogenizing or systematic. For these thinkers the failure of developing countries to progress according to the plan was not a reflection of failure on the part of these countries, but rather failure on the part of the plan that had been outlined by Modernization theory. Development theorists pointed to a pattern in failures of development projects that can be found throughout similar efforts over the twentieth century and argued that the process of categorization and systemization perceived as modeling reality was deeply flawed. The models created by social scientists include assumptions that often reflect much more on the social scientists than the societies they would change. Much that is socially

constructed was taken by the Hegelian tradition as universal. A good example of this is the common tendency of social scientists to use nations as units of analysis and to limit themselves to the methods and intellectual history of their own discipline. A second critical response to modernization theory hinges on precisely this criticism.

World Systems Analysis and Globalization

Globalization was anticipated by world systems analysis. World systems analysis grew out of dependency theory but argued that the limited scope of both modernization theory and dependency theory could not offer an accurate picture of what is occurring on a worldwide level. Instead, following the French *Annales* school, world systems analysis takes a world system as its unit of analysis, thus moving the focus even higher (So 1990). Wallerstein (1978) argues that underdevelopment cannot be understood without recognizing it as a process occurring in the peripheral areas of a larger capitalist world economy. For Wallerstein, attempting to understand underdevelopment in isolation, without reference to a historical, world-level context, results in distortions.

To illustrate, for Wallerstein underdevelopment arose in the 17th century power shift from the Dutch to the English and French during an economic downturn. England and France benefited from colonization while peripheral and semi-peripheral states (like Italy and Spain) suffered. Followers of Wallerstein have insisted that even going back to the rise of modernity in the 16th and 17th centuries is not enough. Abu-Lughod pushes her study back prior to the rise of Europe and focuses largely on non-European countries (1989). This broader perspective is a direct challenge to the assumptions underlying modernization theory. Like development theory, world systems analysis argues that

modernization theory involves too many simplifications that become more reductive than explanatory. By expanding the scope of study, the nation begins to appear a rather capricious unit of analysis.

The pervasive use of nations as units of analysis is largely a result of the conditions from which development projects started. McMichaels (2000) argues that the various development projects have been conceived and implemented under a conceptual framework inherited from the Cold War. The central unit under this framework was the nation and the task of development has been to incorporate nations into the capitalistic system which is led by the model nation, the USA. However, like Wallerstein and Abu-Lughod, McMichaels argues this has underestimated the global nature of economic activity and repeatedly produced a situation in which poorer nations are blamed for economic failures that are produced by the larger global economy. In this way, richer nations can and have conveniently abdicated responsibility.

McMichaels maintains that the first economic failures were caused by attempting to have each nation function as an independent economic unit that could compete with other (already developed) nations. This perspective doesn't take into account the lengthy process that goes into making a nation. For instance, the nation of "France" has not always existed. It was constructed through a homogenizing process that took centuries. Many different languages and dialects had to be pushed aside in favor of the Parisian dialect which became "French." Customs and culture had to be homogenized. That is, France had to be "made." Modernization theorists made the mistake of taking developing nations to be the kind of homogenized nations France, England and the United Stated have become. Countries like China and Bolivia have many different languages, different

beliefs, different races and different fundamental attitudes towards life. Developing nations are not nations of homogeneous, rationally self-interested peoples. It may be impossible for leaders in such countries to get everyone on the same page in terms of national goals and development projects—and even if it were possible, the patchwork peoples might not want to. Not surprisingly, trying to treat China as if its people will respond in the same way Americans do completely overlooks the nuances of what it means to be a nation and what it means to be human.

When the attempt to get developing nations to function as independent economic units on par with the developed nations failed to work, it was suggested each nation should specialize and then enter the global market (as the NICs had done successfully). This attempt also underestimated the complexity of what was involved for underdeveloped nations. Constant throughout these efforts are Western assumptions that are not shared universally and a nation-centric view that has missed global trends.

Problematic Theoretical Assumptions in International Development

Both dependency theory and world systems analysis represent attempts to rethink the problematic fundamental assumptions of modernization theory. The proponent of both approaches argued that Modernization theory made a whole series of assumptions about human nature and the nature of a nation that contributed to the failure of many development projects. However, the assumptions of modernization theory are ultimately founded on deeper assumptions about the nature of knowledge (epistemology) and the nature of being (ontology). Seeing how this is so is critical. These deeper assumptions often go unexamined. Examination of fundamental assumptions reveals that the system of

thought that under girds modern social science approaches is representative of what is often called *modernity* by theorists attempting to think through these assumptions. With this in mind then, modernization theory, then, can be seen as a specific approach used in international development that reflects the assumptions of a larger project: the project of modernity. Despite the pervasiveness and power of this larger project of modernity, it is not without its fundamental flaws. In what follows I attempt to show how the failure of many of these early development projects reveals key problems in the project of modernity and the often unexamined epistemological and ontological assumptions that support it.

The typical model of an institution or organization is to approach problems with an eye to dissecting them, examining the parts and discovering the internal logic. With the problem thus grasped the organization or knowledgeable actor can pull strings and tweak where needed to produce different results.

Postma (1998) argues that modernist approaches to social problems and institutions assume that reality is like a machine. The job of the scientist is discover how the various parts interconnect and work together. For modernists, understanding the issues involved in development projects is a matter of assembling or reordering the proper parts, putting them in the right place and driving away. These epistemological assumption are examined in Chapter 2.

There is a growing acknowledgement that the mechanistic approach is inaccurate and insufficient. Postma argues development issues cannot be approached as one would approach fix a car. Development may not be a smooth running machine, but a river. A river starts small and follows the lay of the land. It gives and it takes. It is never the same.

He highlights one of the key ontological assumptions that inform development approaches: Modernity assumes there is an unchanging core behind appearance that must be accessed. The scientific method aims to strip away false ideas and get behind mere appearances to what actually is. These ontological assumptions are examined in Chapter 3.

The increasingly complicated world of globalization has made it clear that the simple, universal explanations desired by modernity are not possible. Hirshman (1995: 76) argues against "searching for universal solutions to development problems" and defining the "one best way." Theories tend to ossify, but since the social world is "tangled and ambiguous" what may approach being a universal law in some situation may not work at all in a different "subsection of human society" (91). Hirshman argues for a move "from ideological certainty to more open-ended, eclectic, skeptical inquiry" (183). Self-Subversion prevents the reification (deification?) of theories that will inevitably need tweaking.

The lack of self criticism by modernist social sciences comes about because "they invest much self esteem and even identity" in their work. Instead of being flexible, they move forward like Kuhnian normal science, seeking to confirm existing paradigms (90). But, Hirshman warns, a wishy washy world just might require a wishy washy pluralism (198).

Likewise, Wallerstein (1988) adds to the criticism of the limitations of modernity by rejecting its tendency towards math-like concepts that are universal and arguing instead that social reality is in process. Not recognizing the ever-shifting nature of the social world or making over-simple generalizations are errors. Central concepts of world-

systems analysis like core and periphery, are mixed up in the social world, core states often acting in ways like periphery states. Instead of taking central concepts for granted as fixed entities, it is essential to understand the process of their creation.

Wallerstein takes nouns like proletariat and peripheral and shows how tracing their history results in their being verbed to produce peripheralization and proletarianization. The stress on process implies the necessity of macro-level analysis. If one accepts the importance of process one can no longer fall back on non-contextual conceptual building blocks.

Application Issues

Such arguments are not empty intellectual debates. Scott argues the disruption of the moral economy of the peasant due to the colonial imposition of North American capitalism and the modern state led to the major peasant revolutions of the 20th century and events like the Vietnam War (Scott 1976). Colonial powers (and development theorists) treated peasants like the rational actors of bourgeoisie capitalism and expected them to take risks like entrepreneurs, but this ignored the rationality of subsistence peasants who lived so close to the edge. Peasant subsistence logic aims at minimizing risk and assuring relative security, not maximizing profits.

Scott criticizes theorists who define exploitation as an “abstract normative standard” without reference to “the values of real actors” (160). This lack of empirical, phenomenological sensitivity results in the ignorant “easy formulas” that seem to be repeatedly played out in international events (176). This leads to social disruption, increased poverty in peripheral areas, and possibly rebellion and war.

Like Hirshman, Wallerstein, and Abu-Lughod, Scott considers the traditional approaches are dangerously reductive, but Scott is particularly helpful because he shows how the naïve assumptions of traditional approaches turn out in specific cases, what those effects are, and what needs to be done to avoid such errors. It is therefore useful to examine in more detail what Scott has to say.

His argument is most fully summed up in *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (1998). This definitive statement with regard to international development marks a move away from just saying what the problems with development are to the intellectual mindset behind them. It is important to recognize that although development projects fall within the purview of Scott's argument, he also includes the scientifically managed projects that are not limited to development, but are also present in communist and other efforts to socially engineer particular peoples.

Scott begins with an example that shows quite clearly the problems of modernist development theory and practice: German scientific forestry. The application of science to forestry aimed at transforming the "chaotic old-growth forests into a new, more uniform forest that closely resembled [an] administrative grid" (1998: 15). In order to maximize profit from logging, forests were cleared and only certain species of trees were planted in a systematic fashion. In Scott's terms the forest is thus made "legible" (1998: 21), comprehensible to the scientific mind and thus capable of being managed. Not surprisingly, the scientifically managed forests ruined peasant lands and destroyed the ecosystem, which was torn apart and then reordered in ways that reflected little understanding of the interconnection of all the elements of the forest. Vines, a nuisance to

the economically minded scientists, are needed to kill older trees and make room for new growth. The annoying insects of the forest were needed to pollinate the trees, but then larger animals were needed to keep down the insect populations. Eventually scientists began the ironic process of artificially reintroducing elements of the old, chaotic order like beehives and anthills. For Scott, scientific forestry illustrates the "dangers of dismembering an exceptionally complex and poorly understood set of relations and processes in order to isolate a single element of instrumental value" (1998: 21).

It is not a stretch to see that the same kind of logic underlies social engineering and development projects. Scott argues this kind of approach is not only dangerous, it has the wrong idea of what and how both the natural and social worlds are:

> "If the natural world, however shaped by human use, is too unwieldy in its 'raw' form for administrative manipulation, so too are the actual social patterns of human interaction with nature bureaucratically indigestible in their raw form. No administrative system is capable of representing any existing social community except through a heroic and greatly schematized process of abstraction and simplification." (1998: 22)

Here Scott rejects the assumption of modernity that the social world can be made fully transparent to the social scientist. There are too many variables that interact in too intricate a manner to extricate them all such that one can grasp exactly what is going on. All the "diversity and intricacy…could not be assimilated into an administrative grid without being either transformed or reduced to a convenient, if partly functional, shorthand" (1998:24). Modernity for Scott is the attempt to make reality legible.

Scott illustrates this point through the internal colonization of France mentioned above. To make the French nation, the French government saw the need to standardize the language, measurements and land tenure customs of wildly diverse groups of people. Previous to these internal colonization projects each village had its own traditions, its own dialects, and its own measurements. Peasants worked on tracts of land that were often long strips. Simply put, such diversity was hard to tax and hard to control. One hundred years later we find Russia engaged in the same sort of inner colonization, rationalizing and reorganizing entire villages during the Stolyin Reform (1998: 40).

This process of making the world "legible" is just the first step in setting up modernist projects. Once a society has been made legible, it is in a position to be manipulated. When combined with the right ideology, a strong government or a similar powerful organization and an acquiescent civil society, the table is set for the grand social engineering projects of modernity. "The legibility of a society provides the capacity for large scale social engineering, high-modernist ideology provides the desire, the authoritarian state provides the determination to act on that desire, and an incapacitated civil society provides the level social terrain on which to build" (1998:5).

With this pattern in mind, Scott examines the city planning efforts of Corbusier, the scientifically planned Brasília, Lenin's elitist revolution, Soviet collectivization, villagization in Tanzania and Ethiopia, and agronomic science. Each of these examples illustrates his point that such hubristic projects are doomed to fail for not paying full attention to the local social reality of each situation.

As a culminating example, Scott criticizes modernist agronomic science. He offers four reasons for the systematic failures of agronomic science:

1. The discipline originated in “the temperate, industrial West” and thus “inherited a series of unexamined assumptions about cropping and field preparation that turned out to work badly in other contexts” (1998:264).
2. The projects initiated by agronomic science in other parts of the world “were continually bent to serve the power and status of officials and the state organization they controlled.” They were insensitive to the needs of locals (1998:264).
3. The projects’ productionist goals didn’t take into account factors that didn’t seem relevant to the short term purpose of making money. “The systematic, cyclopean shortsightedness of high modernist agriculture courted failure” for lacking to take into account water quality, the relation between farmers, etc (1998:264).
4. The projects ignored local traditions that had been used for years and which *did* take into account the many variables involved. The locals were assumed to be incompetent and their working methods were replaced by scientific ones.

Scott cautions that he does not want to throw agronomic science out, rather he is concerned with the “imperial pretensions” that underpin its inability to be flexible and comprehend with the local understanding that results from years of working in a specific location (1998:264). Why not see the local farmers as scientific experts themselves, as they have spent hundreds of years experimenting on the land they now farm, teasing out the best methods possible (1998:286)?

The problem, for Scott, is not science itself, but unscientific and modernist aspects of scientific practice. He singles out the aesthetic and institutional aspects of high modernist science (1998: 290). It is particularly obvious in the case of city planning that aesthetics, the ideal of an orderly, systematic city got in the way of the living, breathing city that results from more spontaneous growth (1998: 261). The scientifically managed forest looks nice, with orderly rows of trees, but it doesn't work. Brasília looks great on a blueprint or from an airplane window, but the citizens who moved there found it unlivable. This tendency to favor the orderly, systematic, legible map over the lived reality is one of central points of the argument against modernist theory and practice and will appear in various ways throughout this thesis.

The "institutional and perhaps commercial pressures" lead to a strict adherence to method in modernist approaches (1998: 294). It produces results that seem nice and orderly, but that are often gross reductions of what is actually going on. And it is not a matter of simply refining the methods either: when the natural world is tied closely to the social world—and with social reality more generally—there are "too many variables [in] simultaneous play to offer much chance of unambiguous experimental proof of causal relations" (1998: 290).

The Ethical Imperative

It is one thing to do a poor job fixing a car. When human life is thrown into the mix, ethics become a major concern. A large part of the call for change in the mentality and methodology of development projects is driven by ethical concerns.

As Stiglitz (2003) shows in his Nobel prize winning book *Globalization and its Discontents*, narrow-minded modernist thinking still plays an all-too prominent role in contemporary institutions. Stiglitz argues IMF bungling in developing countries is a result of dogmatic market fundamentalism and perpetuates colonialism (41). The IMF, ideologically enamored of the power of the market, has repeatedly implemented policies which ignore the "limitations of the market" and "the social and political context in which all economies must function" in a manner that would make Adam Smith blush (219). For the IMF, faith in the inevitable long term progress justifies short term pains—even to the point that continuing pain is taken as continuing progress (19)!

Stiglitz states that globalization has the potential to do a lot of good, but the policies that aim at guiding the world through the process are exacerbating wounds and need to be radically rethought (ix). The IMF needs to focus on the needs of all, and not just those of creditors (210). Even if the trickle down effect does work sometimes, it certainly will not when moral responsibility is ignored and the IMF acts as a policing agency for the wealthy.

Kaplan (2000) describes the modernist model as isolating, starving and torturing a prisoner. What if, he asks, instead of attempting to beat the prisoner into submission and producing silence and resentment, we instead let him go free? Perhaps if we didn't push him for the answers we want and instead let him be, he might come around. Might not the knowledge we obtain from a friend who feels more comfortable with us be different from what we might glean from clenched, bloodied lips?

Kaplan argues a radically new form of practice and thinking is needed. This paradigm shift involves two aspects: (1) changing from the tangible to the intangible; and (2) from static model to development reading.

(1) Development programs aim at making as much information as possible measurable and quantified. This allows the information to be easily grasped and give indications of what might be done. But, like Scott, Kaplan argues many aspects of real world problems are simply not tangible. Often mistakes are made because the numbers are trusted and the intangible ignored. Kaplan argues scientists are taught to think only in terms of the tangible, and cannot handle what cannot be easily calculated. However, if they cannot develop an ability to move around in the intangible world, they risk IMF–style massive mismanagement. Notice that for Westerners the reaction to the task of learning to navigate the intangible is nearly incomprehensible. To know is to make tangible. Kaplan is pointing to a radical change in thinking that challenges the most fundamental assumptions of our way of thinking.

(2) Knowledge (or organizations in Kaplan's case) is seen as being made up of interconnecting elements. These elements vary from tangible to intangible. The pieces are considered to be static. They don't change. But Kaplan points out how this is an assumption that seems to be proved false time and time again in practice. Real life is more complicated than any amount of variables we can assemble. To avoid beating the prisoner to make it fit (which often produces distorted results) requires an ability to "read" the situation. This means that there is a flexible ability to handle the natural shiftiness of the real life situation. Inflexible imposition on a situation often mangles the thing that is intended to be understood. Again, scientists end up with a situation like the

IMF, imposing the same solutions across every variation and making things worse in the process.

Mistakes in development projects, especially when they are on the global level of IMF, have huge ramifications. Decisions on top affect millions on the bottom. When decisions do negatively affect those on the bottom, sometimes causing more damage than anything else, such mistakes require careful scrutiny. While the project of modernization has had many successes, one of the results of the failures is the attempt to rethink the fundamental paradigm, including the assumptions and methods involved. As seen with Kaplan, it may be that radical changes are needed. Scientists can perhaps force change as they have in the past, but should they not seek methods that don't just beat what they want into place? If we don't stop and ask the important questions, how will we ever know if the suffering required by development projects are necessary "growing pains" or if the suffering is due to trying to force square pegs through round holes? The ethical imperative of development projects seems to require that we develop the sensitivity needed to read situations without modernist pretensions and by doing so be capable to responding appropriately.

For the NGO or government that wants to help some particular cause, how can the pitfalls of previous failures be avoided? In the course of examining the history of the theories that have driven the projects of modernity and the counter theories that have attempted to address its inadequacies we find in both Scott and Kaplan a deep sense that the imperial pretension of modernist ideology is the central problem. Such pretension comes from a deep faith in the ability of science to capture through abstraction the

essential features of a particular phenomenon or society. But, as we shall see in chapters 3 and 4 abstract systems are parasitic on informal practices. They take a reduction as fact.

None of this means that science needs to be thrown out, but, rather, that we need to recognize and explore its limits. In chapter 2 we begin to examine the utopian pretension that drives modernity and the epistemological and ontological assumptions it entails. In the final chapter we will delve more fully into what an alternative might look like.

CHAPTER 2: MODERNITY

The ethical imperative to do a better job with development projects encourages a reexamination of the fundamental assumptions underlying modernity. The successes of modernity have produced an understandable faith in science. Science brings control over the world. But with such power comes danger. Besides the ethical concerns surrounding nuclear power, environmental degradation, and so forth, a far from spotless record in development projects has led to a discussion of the fundamental assumptions of modernity. This chapter will examine the rise of modernity and detail some of its assumptions.

As Postma (1998) hinted in Chapter 1, the project of modernity views the world as a kind of machine accessible to human knowledge and control through math. Such a mechanical view produces a massive academic division of labor aimed at mapping out reality. This may work for the natural sciences, but is problematic for a social scientific approach to understanding and solving development problems. The discipline of history is particularly revealing for how modernity can contribute to its own failure. Historians sought to achieve a universal, positivistic account of history and failed. This failure illustrates how a modernist division of labor in academia works and the problems it faces outside the natural sciences. Such failures are ultimately dependent on ontological assumptions concerning the nature of the being of the things studied by scientists. Instead of producing a unified map of reality that such ontological assumptions point to, the attempt to map reality produces a cacophony of maps and methods. The irony of modernity is that the central aim to produce one united comprehensive vision of the world results in multiple, diverse interpretations of the world.

Modernity

According to Bauman (1991), modernity is a desire for order and a corresponding fear of ambiguity. This definition has something in common with the harsh point of Horkheimer and Adorno in *The Dialectics of Enlightenment* (2002) where they argue that modern thought, with scientists primarily at the helm, is an extension of the premodern mythical quest for control over the world. The sorcerer who casts spells and the scientist who does experiments both have the same goal: the fear of the unknown and the ambiguous drives their attempts to control and order life.

While the premodern also sought after order, it was in the business of *preserving* order. Bauman (1987) describes the premodern as a gamekeeper model. The job of those in charge is to keep the *status quo*. Modernity, however, does not aim to preserve order, but wants more control. Bauman describes the modern as a gardener model. The aim is to make order, as a gardener makes a garden. First, order must be planned. Then, what is in the place of the future garden must be dug up to make way (modernization theory, as we saw above, aimed at eliminating previous cultural norms with those more conducive to the market and growth). The garden is then planted and a process of careful monitoring occurs over a long period of time. During this monitoring anything not a part of the plan, like weeds or bugs, are eliminated.

The Project of Modernity

At times, some critics of modernity, such as Horkheimer and Adorno might lead one to think that modernity is simply about a quest for power. While power is certainly

involved, the founders of the project of modernity certainly didn't consider the kind of power they sought o be malevolent. Susan Neiman has shown how the desire to overcome evil served as the major impetus to the thinkers who initiated the project of modernity. At root, she argues, the motivation for modernist social and philosophical thought is "this ought not to have happened" (2002: 5). She examines the major figures that contributed to the project of modernity and concludes that their many differences revolve around whether they agree or not with the fundamental principle that "the is and the ought should coincide," and how to bring about the justice this principle seeks (2002: 322). In other words, they wanted to improve the condition of humanity. Thus while modernity may be fundamentally flawed, this does not imply malevolent intentions.

If we are tracing the historical origins of assumptions we find Comte was the father of positivist sociology and Rousseau the father of the social sciences more broadly. Going further back, Descartes articulated the methods and basic framework of the project of modernity. In a nutshell, the project of modernity as we think of it now begins with Descartes' plan to find an indubitable foundation for knowledge. Leibniz thought such knowledge would vindicate God. Humans would discover the set of laws that governed the universe and would discover that based on those laws this really was the best of all possible worlds. Neiman points out that this was a pivotal step because it places the laws of the universe higher than God (2002:27). It also put humans in a position to understand the world as God would.

The next step occurred when Rousseau acknowledged the role of history and denied original sin. It was not God that made humankind in their fallen state, but the contingencies of history. Humankind made this world a miserable place and it would be

the responsibility of humanity to fix itself. The Enlightenment, then, had the lofty task of sorting out the flaws of humanity, educating it, and guiding into a better future (2002: 44). This was the plan and project of Enlightenment that Comte hoped would bring about the perfect society. There are many who think it has failed.

Many of the fundamental assumptions of the project of modernity, then, come from Descartes. Indeed, he has become the scapegoat and whipping boy for those opposed to the project of modernity. To understand why this is so requires understanding some of the assumptions made by Descartes, which in turn requires a discussion of clocks.

Machines as a Model for Society

Otto Mayr, in *Authority, Liberty and Automatic Machinery in Early Modern Europe*, argues convincingly of the importance of machinery for early modern thinkers, especially clocks. The early moderns had replaced sundials and waterclocks with mechanical clocks. They didn't stop at building clocks but built life-sized moving figures, fountains, giant clocks, mechanical animals, music boxes, etc. Just as we are fascinated with dazzling, new technology and often develop theories that are sometimes modeled on them, so too the early moderns were fascinated with the mechanical technology of their age and many of the theories that come out of the age were based on the assumption that things function mechanically. The overarching metaphor of the period is, of course, the clockwork universe.

Mayr argues "a central characteristic of the Scientific Revolution was the commitment of its participants to thinking 'mechanically'" (1989: 54). The clockwork

universe is a conglomeration of various parts that fit together like cogs in a machine. The laws of the universe are the pieces that somehow fit together to produce the working whole. The job of the thinker is to figure out these laws. It is no surprise then that Descartes believes causal relationships "were openly visible, unambiguous and expressible in mathematical language" just like the "wheels, springs and weights of machinery" (1989: 62). *Je pense, donc je suis* means, I am reason. And reason is mechanical.

Not only the self becomes mechanical but also the state (1989: 102) and order conceived more broadly (1989: 115). The self regulating market of Adam Smith is just another self-regulating machine (1989: 169). La Mettrie agrees with Descartes but is more explicit in *Man a Machine*. "The human body is a machine that winds its own springs. It is the living image of perpetual movement. Nourishment keeps us the movement which fever excites" (quoted in Steinberg, 2005: 55).

The foundation of the project of modernity, initiated by Descartes and other early modernist thinkers, sought this secure foundation because the massive metaphysical systems of the time were failing miserably. Husserl points out the clockwork universe metaphor takes hold when "the contrast become monstrous between the repeated failures of metaphysics and the uninterrupted and ever increasing wave of theoretical and practical success in the positive sciences" (1970: 11). This important shift is nothing less than the mathematization of knowledge.

In *The Crisis of European Sciences and Transcendental Philosophy*, Husserl pays close attention to this mathematization of knowledge because he thinks it has led to the crisis of his time:

> The exclusiveness with which the total world view of modern man in the second half of the nineteenth century, let itself be determined by the positive sciences and be blinded by the 'prosperity' they produced, meant an indifferent turning away from the questions which are decisive for a genuine humanity. Mere fact minded science makes merely fact minded people…In our vital need—so we are told—this science has nothing to say to us. It excludes in principle precisely the questions which…[are]…the most burning: questions of the meaning or the meaninglessness of the whole of this human existence…What does science have to say about reason and unreason or about men as subjects of this freedom? (1970: 6)

Only mathematical, scientific knowledge is accepted as valid, but humans have to deal with values. Values, the very thing humans need, are excluded as legitimate knowledge and reduced to arbitrary opinions. What aimed to help humanity has created unparalleled power but has abandoned the issues most central to human experience. Husserl argues the mathematization of knowledge which comes from both Descartes and Galileo aimed at omnipotence. The world vision they created is one in which:

> The world is itself a rational systematic unity…in which each and every singular detail must be rationally determined. Its systematic form...can be attained, is indeed known and ready for us in advance, at least insofar as it is purely mathematical…This is the path—infinite, to be sure—to

> omniscience. Thus one lives in the happy certainty of a path leading forth from the near to the distant, from the more or less known into the unknown, as an infallible method of broaching knowledge, through which truly all of the totality of what is will be known as it is 'in-itself'—in an infinite progression (1970: 65).

> Along with his growing, more and more perfect cognitive power over the universe, man also gains an ever more perfect mastery over his practical surrounding world, one which expands in an unending progression. This also involves a master over mankind as belonging to the real surrounding world, i.e. mastery over himself and his fellow man, an ever greater power over his fate, and thus an ever fuller 'happiness'—'happiness' as rationally conceivable for man…Man is truly an image of God…For the philosopher, in correlation with his mathematization of the world and of philosophy, has in a certain sense mathematically idealized himself and, at the same time, God (1970: 66).

According to Husserl, this pretension to be God is why Hume attacked mathematics (1970: 67). This faith in math is why Descartes never investigated the ego (1970: 82). What Descartes forgets is what Husserl calls the lifeworld, the direct connection with the world (1970: 121). I will not attempt to discuss the lifeworld here. That will be the task of the third chapter of this thesis. It is enough to briefly mention that Husserl thinks, with Heidegger, that if the omnipresent desire to mathematize knowledge

is overcome and the lifeworld reexamined without mathematizing it, we discover that there are values (1970: 182). But this story will have to wait.

What has this excursion into Husserl shown us? It gives a better idea of what is entailed in the mechanical and mathematical form of knowledge that has become the standard of knowledge. On this model, knowledge is unambiguous (Descartes' clear and distinct ideas) and combinable into a coherent whole. The knower can gain a comprehension of this whole, but even with knowledge of discrete parts of the whole the knower still gains power. Bacon and Hobbes recognized this. Ultimately, if the pieces were put together humanity would become gods.

The mathematization of knowledge did not only reflect a prejudice concerning the existence and nature of truth. The clarity and precision of mathematics clearly has an aesthetic element. Scott singles out a passage from Descartes concerning the difference between scientific, mathematically designed cities and the chaotic traditional cities that makes this clear:

> These ancient cities that were once mere straggling villages and have become in the course of time great cities are quite commonly poorly laid out compared to those well-ordered towns that an engineer lays out on a vacant plane as it suits his fancy. And although, upon considering one-by-one the buildings in the former class of towns, one finds as much art or more than one finds in the latter class of towns, still, upon seeing how the buildings are arraigned—here a large one, there a small one—and how they make the streets crooked and uneven, one will say that it is chance

> more than the will of some men using their reason that has made them thus. (Scott, 1998: 55)

As the process of knowledge acquisition progressed, it became divided into separate areas of focus that corresponded to different aspects of reality: physics, biology, chemistry, economics, sociology, psychology, mathematics, etc. Thus, the project of modernity became like a puzzle, each discipline concentrating on a part until the finished pieces are put together to form the completed puzzle or map. With the final blueprint in place, humanity will be able to construct utopia.

To understand how the overarching project of modernity shapes individual discipline, I will examine the discipline of history. The debates in the philosophy of history I examine make quite clear the problems of the mathematization of knowledge. What is lost by insisting on systematic explanations is clearer in history than in other disciplines. It is still clearer in disciplines like comparative literature, which explains why the demands of the project of modernity were quickly abandoned when an alternative came around. In history we find both an attempt to submit to the project of modernity and intense debate about whether it is even possible.

19th Century Historiography and the Pretensions of Science

In a story entitled *On Exactitude in the Sciences*, Borges (1999) tells of a cartography guild obsessed with producing the perfect map. A map of a city which is the size of an entire city block is deemed insufficient, and a map that has a 1 to 1 ratio with the city is produced, covering the land. The map is later deemed useless and left to rot.

It seems that every discipline begins with a positivist. Only with a positivist will the project of modernity lend something legitimacy. History begins as a distinct discipline with the positivist Ranke, who functions with something like the mapmaking model of knowledge. According to Ranke, History is only interested in "what actually happened" and the "strict presentation of facts" (qtd. in Stern, 1973:57). The discipline of history rises above the particulars to a "universal view of events" (Stern,1973:59). Like the project of modernity more generally, the finished universal map of history is, in practice, formed like a puzzle. Scholars working on "minutiae" take the pieces they discover and they are "related to a larger context" until the "fullness and totality" of the "universal history" is produced (Stern, 1973:61).

Later positivist historians like Bury and Elton fought to preserve this model of history. "Each published piece of research represented a brick and the work of the historian was therefore analogous to that of a skilled craftsman. The analogy is revealing, for neither Bury nor Elton expected, or desired, the laborer to have knowledge of the larger edifice." Elton encouraged his students to "never raise his eyes beyond the detail of his own minute area of study" (Green and Troup, 1999: 4). History is like a building: with the correct method, a secure foundation is set on which countless scholars can continue to build.

Whether the metaphor is constructing a building or a map, why build it? Why should we care to have such a complete and total map of history? Bury, complaining of the shoddy, uncritical history he sees around him, argues for a "higher, more comprehensive and scientific" approach that will reveal "history's practical significance" (Stern, 1973: 213). What, then, will history do for us? According to Bury, history

presents “true knowledge of the past…in a dry light, in order that their influence on the present and future may be exerted in right directions” (Stern, 1973: 216). In other words, history gives us an accurate picture of the past which is needed to make informed decisions about how to control the future. This aspiration to social control is further illustrated by Buckle’s complaint that history is inferior in its ability in this regard in comparison with physics and that history has not yet produced its own Newton or Kepler (Stern, 1973: 125). According to Buckle, history is a complicated discipline that is only in its infancy (Stern, 1973: 126). Only when history cleans up its act will it become a mature science with a blueprint that accurately maps the past and can be utilized to more accurately understand the present (and control the future). Not surprisingly, at the heart of positivist history we find the same desire for social control and power that we observed more broadly in the project of modernity.

But from the beginning, there has been strong opposition to positivist history. Macaulay, Carlyle and Trevelyan each cast doubt upon the epistemological pretensions of positivist history. Macaulay points out that it is simply impossible to “record all the slightest particulars” (Stern, 1973: 76). There are an incomprehensible amount of particulars and to be human is to select from those particulars. The very fact that we select things to gather together to tell a particular story denies that there is one correct story or one set of recorded facts that are exhaustive and correct. Carlyle phrases it in terms of events: “every single event is the offspring of not one, but of all other events” (Stern, 1973: 95). Thus, the universal and true “experience itself would require all knowledge to record it” (Stern, 1973: 95). Carlyle denies that any person can fully interpret some experience or event (Stern, 1973: 96).

The criticism at work here argues it is impossible to achieve total, universal history. Trevelyan, however, goes further than both Macaulay and Carlyle: he elaborates some of the results of adopting this model. For example, the goal of the universal historical map, of which it is the individual scholar's job to provide a piece of the puzzle which will be later assembled to form a coherent whole, has resulted in no one finishing the map. Because there is no assuredly correct interpretation of a particular puzzle piece, scholars end up arguing endlessly about the puzzle pieces, but the whole remains untouched and unfinished. "The gain in the deeper academic life of the nation must be set off against the loss of its wider, literary life (Stern, 1973: 228)". By getting lost in the nitty gritty, the larger narrative story gets lost.

What do historians do then? If we reject the idea of an objective historical account, does that imply that all histories are valid? Trevelyan suggests that "several imperfect readings of history are better than none at all" (Stern, 1973: 230). Perhaps stated differently, although there is no one final answer with regard to the historical questions, multiple perspectives still give us a good idea of what is going on. Both Macaulay and Carlyle use history as a kind of narrative that is directly related to contemporary human issues. History in this sense is like art. The critics of positivist history abandon its epistemological pretensions. Trevelyan makes this very clear: "the value of history is not scientific. Its true value is educational (Stern, 1973: 223)". History can still do the things positivist scientists want—to help us improve life—but it cannot figure out all the answers first.

Logic of modernity

How are we to assess the project of modernity that has so profoundly shaped modern life? How are we to understand the last 500 years of history and science that have made us what we are and bequeathed us with both our successes and our problems? What is the end point of the logic of modernity? Hans Jonas, in *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*, argues that our technological power has outstripped our ability to control technology. Our power is greater than our knowledge. If some new technology comes along, should we just add it to the pile or stop and think about it? If we do want to think about it, how do we do so? The fish in the water never thinks about the medium it finds itself in. Or, as Wittgenstein puts it: "The aspects of things that are most important for us are hidden because of their simplicity and familiarity. (One is unable to notice something—because it is always before one's eyes.)" (Neiman, 2003: 43) Interestingly, one of Jonas' suggestions is that we pay attention to science fiction (1984: 30). Since it is not often immediately clear what potential implications are, it may take fiction to help think through them.

If we apply the advice of Jonas for dealing with technology to the implications of modernity more broadly, in this case, sociology, we then ask, what would the sociologist of the future do? If a modernist sociology succeeded, wildly, what would its role in society be?

In this case, a frighteningly compelling vision of the social scientist is given by Isaac Asimov in the *Foundation* series. Set in the future, the story begins when sociologists (whom Asimov calls "psycho-historians") led by Hari Seldon have perfected the use of statistics to the point that they can predict the future to 99.9 percent accuracy

(in statistical parlance they get an R^2 of 0.999 every time and are able to extrapolate into the future with such accurate measures of the present). As a result of this ability they discover that society is headed for inevitable collapse. Naturally, the psycho-historians approach the leaders of the galaxy with the disturbing news, but they are rejected. Since the collapse is inevitable, what they attempt to do is decrease the amount of time of recovery from the collapse. Ultimately, the psychohistorians discover that by pulling strings and pushing buttons the shortest time to which they can reduce the period of collapse is 1000 years.

The rest of the series follows the progress of this project. Various groups are sent to distant planets to safeguard the scientific knowledge that can restore civilization. The suspense of the series is generated through the twists and surprises that had been foreseen by the psychohistorians and visits from Hari Seldon in the form of holographic messages which appear seemingly randomly at moments of crisis. Interestingly, at a certain point a mutant aberration screws up the foreseen plan and soon enough the recorded messages from the psychohistorian Hari Seldon become responses to an alternate future that did not come about.

Now, what are we to make of these psychohistorians? Do sociologists truly think that someday they will be able to predict the future based on statistical analysis of the present? Do they think they can control humankind through scientific law? In the case of the father of sociology, Auguste Comte, the answer is emphatically yes.

Comte saw the success of the natural sciences and thought its methods could be expanded to study humans. “The fundamental character of the positive philosophy is to consider all phenomena as subject to invariable natural laws. The exact discovery of

these laws and their reduction to the least possible number constitutes the goal of all our efforts (Comte, 1975: 8). Applying the successful methods of the natural sciences to human society would reveal laws similar to those that govern the natural world. Notice that the laws *govern* the world. If we discover these laws, we will be effectively able to change society. Just like the psychohistorians, Comte saw sociologists knowing how society works and being able to tweak things to work the way they wanted. The sociologist would sit next to the throne of the king and whisper in his ear what he needed to say. As if this were not already an insidious vision, Comte further argues that there will be no room for freedom in the future world controlled by sociologists: when the sociologist speaks there will be nothing for anyone to do but shut up and obey (Coser, 1977: 5).

Both Asimov's psychohistorians and Comte's sociologists are practically gods. They know all; they can righteously command the unfree humanity and produce the best situation for their benefit. Although this Comte is clearly an extreme pole of the logic of modernity, the history of international development all too full of the imposition of the Big Plan of the Planners on those who they deem needs such help. Dependency Theory is essentially the claim that the typical modernization approach is a form of colonialism. Even if this is viewed as an overly harsh assessment, Asimov's psychohistorians and Comte's sociologists do seem to represent the dark side of the project of modernity.

The Academic Division of Labor and the Proliferation of Methods

Postcolonial academia has learned to steer away from such extremes and yet, as we saw earlier, many international development projects still fall into the same old Big

Plan trap. Contemporary thought remains structured by the ontological and epistemological assumptions of positivist modernity, even if it shies away from its more frightening ethical implications. Academia especially has been structured by these assumptions.

Positivist historians like Bury and Elton illustrate the structure of academia under the project of modernity. It is a giant conglomeration of scholars with their noses close to particular aspects of reality, mapping it out as carefully as possible. Elton didn't want scholars to be distracted by the larger whole. Their job is to focus on producing perfectly accurate pieces which are offered to the academy for peer approval and, if deemed worthy, added to the growing puzzle. The hope of modernity is that the pieces will all come together to form a giant map, the map of reality. With this map finished, the engineers move out, constructing and fixing the world, and, in the case of social engineers, remaking humanity in the best way possible.

It is no surprise, then, that Enlightenment thinkers fastidiously worked to create the encyclopedia that would contain all knowledge. With the encyclopedia complete it would be a matter of distributing copies to be read by the public for their enlightenment. With the proper knowledge they would take control of their lives, their government, their morals, and bring about utopia.

To build or put together the complete encyclopedia requires a far reaching division of labor. As if it were approaching a machine to figure out how the parts come together, academia began to split itself into pieces which each resolved to do their part to discover how the subject of their particular discipline worked and to map their parts of the puzzle. Philosophy was the original discipline, but as mapping effort moved forward,

different disciplines split off from philosophy and have continued to fragment as the need for more specific information has increased. Thus, as the efforts proceed, philosophy becomes philosophy and science - the former deals with metaphysical questions and the latter with scientific ones. Eventually, the sciences split into science and humanities. The sciences split further into hard sciences and social sciences. The social sciences divide up into economics and sociology. Anthropology breaks off. Psychology breaks off. This increasing specialization continues until we have the massive division of labor one sees in contemporary academia.

The journal format that scholars and scientists still use is a reflection of this map making endeavor, the division of labor that aims to fill in what is still missing in the puzzle. The beginning of every paper is a review of the literature that aims to show where a certain piece of the puzzle is missing, or how a previous piece of the puzzle is problematic. The irony is that no one is putting the pieces together. The disciplines have become so specialized they cannot or do not communicate with each other. There are too many pieces now. No one person is capable of putting them all together. Furthermore, because of the growing body of criticism of positivism and the project of the Enlightenment, its goal, in the most complete form (utopia), has been largely abandoned. The structural organization of academia has remained however. Thus the contemporary academic finds themselves in a structure that encourages the continual creation and assessment of puzzle pieces, without integration of the puzzle pieces.

The attack on positivism also brought recognition that the academic division of labor was problematic. Historians like Ferdinand Braudel decided the dominant political history of the twentieth century was inadequate and took a much more comprehensive

approach, mixing history, sociology, economics and geography. Braudel was not alone either. Once the pretensions of positivism came under attack, space was open for alternate methods that had previously been denied. The proliferation of approaches and methods is phenomenal: comparative historical sociology, economic history, political history, social history, cultural history, literary history, phenomenology, ethnomethodology, posthuman theory, postmodernism, structuralism, poststructuralism, deconstructionism, postcolonialism, feminism, postmarxist theory, pragmatism, and so forth. Implicit in all these new theories, methods and approaches are a variety of criticisms of the project of modernity, of its mechanical view of the universe and the corresponding view of the self and the nature of knowledge. Life was simpler when it was all positivism.

The promise offered by the project of modernity was nothing short of utopia, heaven on earth, the omniscience and omnipotence of God in the hands of humanity. These dreams have faded away in the mists of knowledge and the minutiae of specialization. Instead of the complete encyclopedia, we find Borges describing an endless library where vagabonds wander in search of the key to understanding. Instead of clear maps, we find Kafka cowering and T.S. Eliot wandering in the *Wasteland*. Reality fragments. The self fragments. Truth and falsity multiply. The utopia promised by modernity no longer promotes faith. Modernism (the literary movement) lamented the death of the dreams of modernity and sought some other way to resurrect the project.

The postmodernist Calvino begins *Invisible Cities* with a sentiment that reflects the failure of the project of modernity:

> In the lives of emperors there is a moment which follows pride in the boundless extension of the territories we have conquered, and the melancholy and relief of knowing we shall soon give up any thought of knowing and understanding them.
>
> It is the desperate moment when we discover that this empire, which had seemed to us the sum of all wonders, is an endless, formless ruin, that corruption's gangrene has spread too far to be healed by our scepter, that the triumph over enemy sovereigns has made us the heirs of their long undoing. (1978: 5)

Fragmentation and Cacophony

Bauman (1991) argues modernity's quest for order results in fragmentation. It breaks the world into manageable pieces that can be more easily understood and managed. If you want to understand how a car works, you disassemble it and put it back together. Such a method has produced results: the gains of modernity are staggering. The sheer amount of information and knowledge has exploded. Life has improved for many as unjustified authority has been undermined. The project of Enlightenment has taken hold: the ideals of freedom, justice and equality are spreading.

But it is rarely so simple. There have been troubling losses in the process. In the premodern world there was a kind of security. Giddens (1991) calls this ontological security, by which he means the premodern individual had few possibilities and hence felt safe with their being. The fundamental categories she used to interpret and act did not

change drastically in her lifespan. In modernity on the other hand, there is more information and possibilities than any one individual can hope to comprehend. Giddens shows how the individual in modernity now has to make themselves. They have to select from a massive number of possibilities what they will do and be. This was not an option for the premodern individual.

The unparalleled increase in information and possibilities opened up by modernity threatens to overflow all bounds and create a situation in which life becomes muddled and hazy. Bauman (1991) argues modernity's quest for order ends up creating such a tangled and complicated situation that the end result of modernity is no longer clarity but ambiguity. Instead of polyphony modernity has produced a cacophony.

The cacophony of possibilities that has been produced by modernism suggests there may be multiple correct truths, that truth may be made, that truth becomes. The cacophony of possibilities and alternatives suggests there may be no single, undisputable best world. The ambiguity created by modernity is producing a postmodern world, a world when existential security has been undercut by seemly endless alternatives and possibilities, which has produced a state of nihilism.

The ironic result of the attempt to get everything in its right place is that the efforts have produced so much information and so many new classifications that it can no longer be comprehended by one person or a larger group for that matter. The map has turned out to be so large and complicated that no one can get a grasp on the whole.

According to Bauman, modernity, in its vigorous efforts to grasp reality, has ultimately shown that all the grasping is making things worse. Like Princess Leia said to

Darth Vader in Star Wars: “the tighter your grip, the more galaxies slip through your fingers.”

Metaphors for Modernity

This discussion has been slowly collecting metaphors for the project of modernity and those who carry it out. These metaphors come from both those who are supportive of the project and those who think it is has failed or will fail. Together they offer an insight into the assumptions of the project of modernity.

1. Modernity aims at making an accurate map of reality.
2. The world is a machine.
    a. The machine is made of discrete building blocks.
    b. Different disciplines are responsible for different aspects of the machine or map.
    c. The final product comes together like a puzzle or like a clock.
    d. Math is the language of reality.
    e. When it is finished, humanity will be both omniscient and omnipotent—like God—and be able to bring about utopia.
3. Modernity is gardening society.

We could spend more time teasing out interesting metaphors used by or used to describe modernity, but those we have found are sufficient. Where do these metaphors leave us? They show, *at bottom, the project of modernity assumes that there is one unchanging reality that underlies the world and human experience*. At first this appears a

fairly mundane observation. It is not immediately apparent why that is such a controversial claim.

What if, instead of a hidden eternal truth behind a façade that can be mapped, reality is a fractal? Fractals are infinitely complex. If you zero in on any part you discover new shapes. Keep zooming in and there are different shapes. Zoom out, same results. The fractal is never exhausted. It is like a tree. From a distance it appears to be a tree. But as one moves closer one sees a branch. Move closer, a leaf. Then one could zoom in closer and see cytoplasm, then individual cells, then atoms, then neutrons and electrons. Unlike the tree which seems to have terminal points when a particular perspective is forced to an extreme, a fractal has no extremes. Zoom in, zoom out—there are an infinite amount of shapes. If the disciplines that make up academia are working on different parts of the fractal, with different reference points, then for all their fruitful description of the fractal no ultimately coherent whole will ever emerge. This does not mean what they are saying is wrong, just that they can never get the complete picture. Furthermore, they may arrive at legitimate contractions.

If we take history into account we could think of the fractal as a wriggling fractal—moving slowly over time like a polyp. One could pick a particular part of the fractal to map, only to discover ten years later it has shifted and the map one was creating is no longer accurate. Twenty years on is it quite warped. One hundred years on the map no longer matches the fractal.

This fractal model of reality is attractive. It would explain the lack of success on the part of the social sciences to generate a coherent picture of the whole. It would

explain how different approaches and perspectives are producing different, sometimes contradictory, results.

In Western thought, at bottom, there is one unchanging reality. Can we learn what it is? The Greeks, beginning with Plato, seemed to think so. Through contemplation we discover the true forms of the things in the world. Modernity, beginning with Descartes, agrees with the Greeks. The project of modernity is the modern version of Plato's theory of forms, but with a method it claims will dispel the illusions and reveal the eternal truth behind the façade.

We have already seen what happens if one believes 1) that there is one underlying, unchanging reality that anchors the world we live in and 2) we can discover it though the scientific method. The physical sciences did such a good job at figuring out how things worked and producing wonderful new toys like clocks that soon enough everything in the world was believed to be capable of being disassembled like a machine and a massive academic system was formed to discover the truth behind the façade.

There have been enough problems with the system, however, to suggest that there are good reasons for abandoning these assumptions or at least seriously limiting their reach. Within the physical sciences themselves, there are indications that at bottom reality is not an unchanging Same. Quantum mechanics shows that on a molecular level everything is much more chaotic than originally thought. Nevertheless, for the purposes of this thesis, the real problem has been the application of these assumptions to the social sciences.

The (1) first problem is that the social sciences have never achieved the systematic totality aimed at by modernity. They haven't produced the same results. This could be because there are simply too many variables. Or, it could be that the ontological assumption that at bottom there is one true reality is wrong. The fractal model might be a better fit.

The (2) second problem is that political decisions are being based on information produced by the social sciences that is perceived to be scientific and hence correct.

The first problem concerns whether the ontological assumption of modernity is correct or not. The second, however, is much more dangerous. It concerns the real world effects of assuming this kind of ontology holds true of the social sciences. I suggest that the failure of the social sciences to deliver in the political arena (2), shows the problem of these ontological assumptions (1).

In chapter 1 we already examined a case of the application of these ontological assumptions and methods to a social problem—international development. Ultimately I think these efforts will remain less effective if they continue to hold hard and fast to traditional approach used in the social sciences. I take this failure to indicate the need to rethink our fundamental ontology. Chapter 3 will turn to this task.

CHAPTER 3: RETHINKING ONTOLOGY: NIETZSCHE AND HEIDEGGER

The reason the project of modernity hasn't worked as smoothly as it aimed to may be simply that the social sciences are nascent sciences that need to hone their methods. Contrarily I suggest that the evidence is already overwhelming: social phenomena are different from the kinds of phenomena studied by the natural sciences. As such, the social sciences require a different approach than that offered by the natural sciences. Recognizing these differences is essential to more effective international development efforts. Since the natural sciences have proven so effective and successful, it is hard for social scientists to pull themselves away from it. Both Nietzsche and Heidegger are pivotal in helping comprehend why this is necessary.

With this in mind, this section examines the philosophical rebellion of Nietzsche and Heidegger. Both argue that modernity has failed. Despite new inventions and longer life, modernity has made life meaningless and nihilistic. To overcome this nihilism, Nietzsche and Heidegger go back to the Greeks and argue that Socrates and Plato sent the West off on the wrong track. Both argue ontology is the starting point for understanding the problematic aspects of modernity.

Nietzsche and Ontology

Ontology is the study of being. At first glance, it is hard to understand why ontology matters. This is not surprising, Heidegger argues in his watershed work, *Being and Time* (1962), that we have forgotten the question of being (1). Heidegger points out that we don't even know how to handle issues concerning being. We tend to assume what is just is, and forget that a particular state of affairs could be different. Originally, the

question of being concerned whether reality was constant becoming or simply being. With Socrates and Plato, being was the victor. This was the foundation of Western thought and, according to Nietzsche, a mistake.

For Nietzsche, as he argues in *Twilight of the Idols*, the entire Western tradition since Socrates has been driven by hatred of becoming (Kaufmann, 1982: 479). If something changed it was deemed transitory and therefore untrue and unreliable. For Socrates reason will enable us to discover what is unchanging behind shifting, misleading appearances.

But Socratic forms of reason, according to Nietzsche, result in nothing less than a process of mummification. He thinks western thought has consistently sought to stop movement, to form concepts that are universal across appearances. It sees change, but wants to slow and stop change in order to get a clear view of what is going on. “When these honorable idolators of concepts worship something, they kill it and stuff it; they threaten the life of everything they worship” (Kaufmann, 1982: 479).

At the heart of reason is the principle that whatever becomes has no being. Only what has being, what is without change is real. This mistrust of becoming results in mistrust of the senses which reveal to us “becoming, passing away, and change (Kaufmann, 1982: 481)”. It is ironic that that which allows us to see and interact with the world, the human body and the human senses, is depreciated for abstract reason. Nietzsche mocks those who think the real world is signs, logic, numbers and abstract symbols, and not the world we experience with our bodies. The abstract, distant, empty God of Aristotle—a product of the logic and process of reason—shows the absurdity of this kind of rationality.

Why is it so natural for us then to think this way? Nietzsche's answer is that being is embedded in our language. Being is "projected by thought" and "pushed underneath, as a cause" (483). Nietzsche goes so far as to suggest we can't get rid of god (and the corresponding idea of the true world) because we are held captive by our faith in grammar. In other words, our language is a way of freezing becoming. It creates boundaries and limits that help us function and move in the world.

The True World

Once being and reason have become the standards for what constitutes knowledge, the next step is to see this world, a place of becoming, as an illusion that somehow hides or covers what is real. This is exactly what Plato's allegory of the cave points to: you cannot trust this world; you must learn to leave it and see the true world. Reason is what aids you in the process of throwing off the world of becoming and seeing the world of being.

Nietzsche gives a brief "History of an Error" to describe how this fundamental understanding of the "true world" has changed over time (485):

1. First, the true world is accessible to the philosophers and sage through reason. This is Plato's model.
2. Second, the true world is out of reach for now, but promised to those who do what is required to obtain it. This is Christianity.
3. Third, the true world is something we cannot access, but the still impels us. This is Kant's model of the true world.

4. Fourth, the true world because it is now considered unattainable begins loosing it's power.
5. Finally, the idea of the true world dies. Nietzsche points out this also means the idea the apparent world is false also dies.

What are we left with? This brings us to the reason Nietzsche first began looking at the issue of ontology at all: Nietzsche found the world of the late nineteenth century was slipping into a money grubbing, meaningless morass. He sought to diagnose this malaise and overcome it.

Thus, on the one hand we are left with nihilism. "What does nihilism mean? *That the highest values devaluate themselves.*" (1968: 9) Paralysis comes when the guiding values and norms that oriented and were instinctual to humanity have become discredited or doubted or have simply run their time. The "center of gravity" is lost (1968: 20) and what is left is utter disorientation. Another way Nietzsche says this is in the proclamation of the visionary madman: "God is dead (1974: 181)". By this Nietzsche means that faith in unifying absolutes, God and God's replacement, Reason, is no longer tenable. The result of losing the big picture is instructive:

> How could we drink up the sea? Who gave us the sponge to wipe away the entire horizon? What were we doing when we unchained this earth from its sun? Whither is it moving now? Whither are we moving? Away from all suns? Are we not plunging continually? Backwards, sideward, forward, in all directions? Is there still any up or down? (Nietzsche, 1974: 181)

On the other hand, the long tradition of thinking about reason on the terms outlined above is coming to an end. Because it is entrenched in our grammar and our basic ways of thinking, it will still be a long time before something else will take its place. What "something else" though? What alternatives are there?

The question of what takes the place of the inherited Platonic understanding of reason and the world is one that drives postmodernity. While it is not limited to this question, it certainly has to deal with it. The recognition that the Platonic model is breaking apart has produced multiple responses like Pragmatism, Phenomenology, Deconstruction, and Post-structuralism. The last two are intellectual descendents of Phenomenology, which is similar, though not the same, to Pragmatism.

I take Heidegger to be the philosopher who rose up to respond to the Nietzschean challenge, so that is where we turn now.

Heidegger and Ontology

Heidegger agreed with Nietzsche that the nihilism of modernity is caused by the slow unmasking of the project of being. By searching for being, more often than not a particular way of being was taken as ultimate being. The search for the final answer seemed a dangerous dream that risked systemizing all of humanity under scientific categories that denied the particularities needed for meaningful life. The end of taking being as the ultimate is the assembly line. To make his argument, Heidegger uses a method called phenomenology. Phenomenology entails describing real life experience as

it is experienced. This may sound trivial, but phenomenology often reveals important details that have been overlooked or taken for granted.

Phenomenology involves describing regular events in fuller detail than we might ordinarily try to understand what is going on. So let's take Heidegger's example of hammering. In the act of hammering, what goes on? To the carpenter in his shop as he is hammering, what does it feel like? Is he thinking about the angle and force of swing that will best nail in the nail? Is he thinking about the movement of his wrist as he hammers? Heidegger's answer is, of course not. Heidegger draws attention to when one is absorbed in a task like hammering one doesn't think or consider "hammering" in ways a Platonic conception of hammering would require. For everyday hammering there is no need to think in terms of systematic principles. For the proficient hammerer, hammering occurs almost without thought. It is almost as if the hammer is a part of the body, a part of the hand. Sports are another example. For anyone who plays a sport regularly and well, this experience of acting without thinking is really clear. As a skilled basketball player moves around the court, they don't think "oh I must be move my legs this way and hold my arms out that way…now I must jump—uh oh, he's going to block me! I have to readjust, move my left hand to the left…" I was recently playing basketball when an inexperienced player quite seriously told me his game plan: "when I get open, pass me the ball." This was perplexing, because this is common knowledge in basketball. There are complex strategies to get open, and even those are not something the player is explicitly aware of, rather, for the player, they just happen as if responding to various strategies is just natural. In a smooth flowing game, the skilled players doesn't think about what they are supposed to be doing, they just do it.

This also explains why in the 2006 baseball season Alex Rodriquez, one of baseballs best hitters, suffered a terrible hitting slump and was told he was thinking too much. This is absolutely correct according to Heidegger. The habits that make a player good are body knowledge. It is knowledge that is an integral part of how the body moves and acts in the world. Plato denies the extent to which such knowledge plays a role in human life. Yet, most of our knowledge occurs in this form. We might not realize this because we are often aware that we are thinking when we are thinking. We recognize the act. We don't recognize that there is a kind of knowledge in how we use language or how we play a sport because such knowledge is not thought, it is acted out.

Let's return to the hammer. If while one is in the process of hammering the hammer breaks, the absorbed action comes to an end. The carpenter now has to stop and look at the hammer in a way he wasn't previously. He has to work through possibilities of what happened and how the hammer can be fixed. Now the carpenter may be using the kind of reason Plato extolled. Heidegger calls the way the world appears when one is looking at it in this abstract, distant manner "present-to-hand." When one is engaged with the world and involved in it, the world appears as "ready-at-hand." Which way is more common, engaging with the world in a ready-at-hand manner or in a present-to-hand manner? Heidegger argues the majority of our actions and knowledge take place in a ready-at-hand manner.

Heidegger also argues the present-to-hand is only possible if there first exists a world that an individual acts within in a ready-at-hand manner. The present-to-hand is a withdrawal from a world of activity—it would make no sense to stand back from a disruption in the meaningful significations that make up activity in a world if there were

not first such a web of significations. Here Heidegger is breaking with the tradition in philosophy which has followed Descartes in thinking of the individual self as the one thing of which we can be sure. Heidegger rejects the atomism this implies because there is no phenomenological evidence that the individual exists in some neutral state that can see objects in the present-to-hand way before existing in a world they are familiar with in a ready-at-hand manner. In opposition to Descartes, Heidegger argues the Platonic way of looking at the world is only possible if preceded by an experience of the world as ready-at-hand. The ready-at-hand is prior to the present-to-hand.

World

Heidegger thinks the problem with much of western thought is that it has forgotten that the present-to-hand is only possible if there is first the ready-to-hand. The ready to hand occurs within a world—the contextual, complicated place that Plato said had to be ignored to achieve true knowledge. Thus, in international development, attention is focused on those things which can be clearly quantified, measured and expressed. This forgets the kind of knowledge that people use in everyday life. It takes a complicated and flexible situation in which individuals function according to complex, often unstated but understood social norms, and reduces it to a more comprehensible model that greatly simplifies what is occurring.

The phenomenon of ‘world’ is an attempt to get away from such models and, more philosophically, thinking in Cartesian terms of a mind that floats apart from the foreign world. Heidegger points to what lived life is like: while there are times we look at things abstractly and seem separated from them, most of the time we exist with objects and people and function in and

among them with a closeness and familiarity that is a sharp contrast to the abstract thinking self of Kant and Descartes. I write with my pencil and type on this keyboard without having to think abstractly about it, I just use it. What Heidegger is doing with this description is attempting to erase the easy divide between the subject and the object. Instead, we live in a 'horizon' that is 'disclosed' to us. We live within a world with objects that are revealed to us, appear, or in other words, are 'disclosed' in a certain way. There is no possibility for abstraction, for the kind of autonomous self Kant describes, without the more fundamental relation in and among objects and people. As such, the way I think about the world is not just a function of accessing the world, but also of accessing it from a certain perspective—this is what traditional thought forgets, as Young puts it, "the perspectival character of our basic perspective on things" (2002: 29). We live in a particular time and in a particular culture and for the most part adapt those ways of dividing up the flux and acting. But knowledge is not just a function of culture and conditioning, as a historicist may argue. While we have certain filters through which we interpret reality, we cannot make reality whatever we want it to be—objects limit the possibilities of our interpretations of reality. Thus, Heidegger is not a relativist. Much of what he is after is to describe the tension between the reality of objects and the filters we put on them to understand them. His point is that there is not a list of attributes to a particular object which we can find out, for the objects always overflow our understanding, they are always more than what we see and experience.

Implications: Fuzzy Ontology

For Heidegger, one of the neglected issues of western thought is the question of being: what does it mean for a thing to be? This question makes sense coming from the background we have also seen with Nietzsche who argued western thought had

condemned becoming in favor of being right off the bat. Heidegger thinks Nietzsche is on to something and thinks if we phenomenologically examine our everyday experience we quickly discover the abstract form of thinking which has been the standard of what constitutes knowledge since Plato is only possible because we live in a world that shapes us through language and gives us all kinds of body knowledge.

This particular theme in Heidegger's thought has been most developed by Merleau-Ponty and Hubert Dreyfus. Merleau-Ponty's *Phenomenology of Perception* took the framework of Heidegger and focused on the role of the body. The term "body knowledge" I used above comes from Merleau-Ponty's work. Dreyfus builds on both Heidegger and Merleau-Ponty and argues that when we first learn it is in terms of rules (Flyvberg, 2001). We learn steps that produce certain results. The non-expert has to think about the rules and how they fit into a particular situation as she goes. But as she becomes more adapt at something (say surgery) she no longer thinks about what she is doing, but comes to simply respond to the situation. No longer does she think, her body responds.

Once we recognize body knowledge—knowledge that can adjust and function in a world of becoming—is the precondition for abstract knowledge, we can now imagine rethinking what it means to be. As we have seen, for Plato to be is to be something objective, explicit, a-contextual and systematic. Furthermore, it remains constant and doesn't change. To be is to be a thing.

But if we recognize the derivative form of knowledge this constitutes, and consider the alternative, what would it mean to be something that becomes?

It means to be is to be fuzzy. No longer is the object fixed into one set of meanings, but it can have different meanings depending on the situation. This also implies it can have different

meanings in different cultures. A Buddha statue is a god in one culture, a novelty in another, and meaningless rock to another. Are all these different meanings "valid"? Are they legitimate interpretations?

For Heidegger the world we are born into shapes the way we understand and categorize the objects in our world. Such understandings are limited by the inherent possibilities of what an object is. For example, the object we call a "table" can have different meanings: it could be seen as firewood, as something to block a door, as something to eat on, as art, etc. It cannot be a computer however. What a table is ontologically is "fuzzy." This "is" is not a static core—there is not something exhaustively discoverable at the middle. Fuzzy ontology implies there are limits to what a thing can be. A table is never a computer. It can never compute.

Bauman (1993) argues thus fuzzy ontology is not relative. Because of the historical dominance of the idea that to be is to be in the permanent Platonic sense, when that model is denied it is assumed that all is relative. If it is not universal and constant then it is relative and fleeting. But this doesn't follow. Fuzzy ontology has a limited possibility of things it can be, but that penumbra of possibilities is always nebulous. We can never figure out all the possibilities.

Controlling the Ambiguous Fuzzy

Heidegger sees the history of philosophy since Plato as a history of attempts to stem the shiftiness of becoming, to control fuzzy ontology, to totalize and systematize it. He wants to move away from the Cartesian split between the subject and object which he sees culminating in the nihilism. When the world is viewed as an object humans can comprehend and control humanity ceases to see it as a force that we must work with and respect. Humanity comes to see the world as a resource it can use, instead of a partner it can work with. Heidegger wants to find

another way of approaching the world that lets it be instead of taking it over. As Caputo puts it, Heidegger defines 'thinking' (his alternative way of approaching the world) "in opposition to willing," which is the "imposition of human subjectivity upon things" (1987: 98).

According to Heidegger the flux, reality, is infinitely rich. Every individual and culture has to approach that flux and appropriate it to make sense of it and function in the world. But philosophy has been searching for *the final answer*. As Julien Young puts it, in searching for universal traits and absolute understanding, metaphysical thinking forgets it is making a selection "from the smorgasbord of attributes possessed by reality itself." It "elevates (what is in fact) a particular disclosure to tyrannical status, a status which allow the possibility of no other reality-revealing horizon." Thus, "as Heidegger uses the term, the error that is metaphysics [traditional thought] may be defined as the absolutization of some (of any) horizon of disclosure" (2002: 29).

The two approaches Heidegger contrasts, willing and thinking, represent respectively taking over reality for whatever ends we find useful and letting be. The former is obvious to us—science does this, it approaches objects to understand them and to learn how they can be used. Heidegger doesn't think this is bad. When it does become dangerous is when science or any other way of understanding the world claims predominance over all others. Thus his work is an attempt to restore the understanding of the complexity of reality and the need to be open to other possibilities. Instead of limiting reality to one, absolute, propositionally static understanding, Heidegger wants to describe the possibility of letting reality be, letting it show up, instead of forcing it this way and that.

CHAPTER 4: IMPLICATIONS FOR INTERNATIONAL DEVELOPMENT

The paradigm that flows out of Nietzsche and Heidegger is radically different from the traditional philosophical one that informs the project of modernity and both the natural and social sciences. The tradition values knowledge, abstract concepts and systematic approaches. Nietzsche and Heidegger show that knowledge is not continuous or even conscious most of the time. Time and perspective are seen as necessary conditions for experience and efforts to escape them dishonest. The individual is not seen as a Cartesian subject, but rather embedded within a culture that shapes how she sees the world.

According to Nietzsche and Heidegger the fundamental assumption upon which the entire Western tradition has been built is that behind the façade of appearances there is an underlying, eternal order. What if the rug is pulled out from under this fundamental assumption that there is a static reality that humanity must discover? How would the social sciences change if Heidegger and Nietzsche are right and reality is not simply a static one?

Rorty argues western thought is based on the task of finding ways to accurately mirror the underlying, eternal order: "The picture which holds traditional philosophy [and science] captive is that of the mind as a great mirror" (1980: 12). The data gathered in research is meant to be as accurate a representation of reality as possible. But if what the mirror reflects is not the one true reality, but a perspective on reality or a part of reality, then the truth is no longer eternal, universal truth, but *a* truth or *a part* of truth. It actually is not much of a problem unless *a* truth is taken as *the* truth. This becomes especially dangerous when a particular model is taken as complete, universal truth—or even something approximating it. Foucault spent his career showing that this is exactly what

has been happening in modernity: particular truths are being taken as the ultimate truths and universally imposed on everything that doesn't fit. The particular perspective "discovered" through scientific methods justifies hammering everything that varies from the norm into the norm.

If there is no static reality accessible through the right methods, then systematic thinking can never exhaust all there is to reality. Nietzsche made this point forcefully: "I mistrust all systematizers, the will to systematize is a lack of integrity" (1982: 470). I argued in Chapter 2 that reality is often taken to be like a machine comprised of parts, or a giant puzzle comprised of pieces. If this were so, it would make sense to have a thoroughly systematic approach which would methodically examine all the pieces and how they go together, gathering details until they are all gathered. Nietzsche's point is that no amount of systematic study will ever produce the ultimate, finished product. There are always more details, more perspectives, more truths. Again, the danger is in taking a particular perspective as the universal truth. It reflects a lack of integrity.

This also helps explain why Nietzsche attacked Socrates. Socrates' error, according to Nietzsche, "consists of raising analysis and rationality into the most important mode of operation for human activity, and allowing these to dominate our view of human activity" (Flyvberg, 2001: 23). Notice that Nietzsche does not want to throw rationality away, rather he rejects the hegemony of rationality. It is one "mode of operation for human activity," not the *only* mode of operation however. "Rationality may endanger sensitivity to context, experience, and intuition" among other things (Flyvberg, 2001: 23). In section 3, I examined Heidegger's description of rationality and analytic thought as a mode of understanding that only exists when the life world breaks down.

Everyday life is not rational in the analytic sense. It is not surprising that this bias towards the analytic has produced an atomistic model for human behavior in rational choice theory. For Heidegger and Nietzsche, rational choice theory is an idiocy. It turns humans into robots, something they simply are not:

> "What? Do we really want to permit existence to be degraded for us like this--reduced to a mere exercise for a calculator and an indoor diversion for mathematicians? Above all one should not divest existence of its rich ambiguity...
>
> "--an interpretation that permits counting, calculating, weighing, seeing, and touching, and nothing more--that is a crudity and naivete, assuming that it is not a mental illness, an idiocy...
>
> "A 'scientific' interpretation of the world, as you understand it, might therefore still be one of the most stupid of all possible interpretations of the world, meaning that it would be the poorest in meaning...
>
> "An essentially mechanical world would be an essentially meaningless world." (Nietzsche, 1974: 335)

The mechanical, meaningless world leads to nihilism and, according to Nietzsche, needs to be overcome. “As an antidote to Socrates, Nietzsche suggests that the central task for human beings is not the Socratic one of making knowledge cerebral and rational but instead one of making it bodily and intuitive” (Flyvberg, 2001: 23). Any system of explanation that takes the rational and analytical as the essential element, especially when

dealing with humans, simply misses out on the diversity of what it is to be human. What is needed are ways of thinking that avoid such reductionism and attempt to think about humanity and the world in ways that recognize the complexity and different modes of operation of humanity. This is exactly what Scott argues. Indeed, as we saw in chapter 1, it is in rubber-hits-the-road projects like international development where these issues are particularly evident.

International Development

So what then about international development? What if the rug is pulled out from under this fundamental assumption that there is a static reality that humanity must discover? Easterly phrases it the most provocatively: "The right plan is to have no plan" (2006: 5). Of course, he doesn't mean that there shouldn't be any plan at all, rather that international development is too often treated like a "technical engineering problem" in which the most important thing is to figure out what is going on first and then to descend on the problem and fix it (6). Like Postma, Easterly thinks development projects are not like fixing a car. To put it in ontological terms, it is not a matter of simply figuring out all the variables involved—there are too many variables, too many parts, changing too fast to create an accurate map.

Problems in development are a shifting target. An NGO may change one thing only to find it completely changes everything else and requires a complete overhaul of plans. Social scientists steeped in traditional methods based on the problematic ontological and epistemological assumptions are likely to find themselves focusing on figuring out what the problem is in their ivory towers instead of solving problems as they

arise. Scholarship wants to figure out the problem before attempting to solve it. Yet for many development problems it requires a kind of flexibility that doesn't assume it is a matter of understanding the variables first. It requires what Scott calls Mētis.

For Scott, approaches based on the ontological and epistemological assumptions of modernity tend to create maps, models and simplifications that miss out on the complexity of development issues. What can be done to overcome the "thin, formulaic simplifications imposed through the agency or state power" (or even NGOs) that have caused for many failures? (1998:309). The first step is to recognize that "formal order…is always and to some considerable degree parasitic on informal processes, which the formal scheme does not recognize, without which it could not exist, and which it alone cannot create or maintain (1998:310). Such formal order is often an imposition aimed at "control and appropriation" (1998:311). What is needed is a form of knowledge and an approach towards development that Scott calls mētis. Scott chooses the Greek word mētis to contrast episteme and techne, formal, technical knowledge. Mētis is then "a wide array of practical skills and acquired intelligence [that responds] to a constantly changing natural and human environment" (1998: 313). Thus, as we have seen, technical scientific knowledge is like grammar. It offers a simplified version of a language and some rules that do seem to be at work. But knowing the grammar of a language does not constitute knowing a language. The actual spoken language is mētis. Like Wittgenstein, Scott argues we learn the lived, actual language first and only later come to learn the formal grammar—if we learn it at all (1998: 319). We only take the grammatical rules to be the essential part of language because we conceptually ignore all the practical lived aspects of mētis.

Bent Flyvberg carries on a similar discussion in *Making Social Science Matter: Why Social Inquiry Fails and How it Can Succed Again*. Like Scott, Flyvberg argues western thought privileges conceptual thought over practical knowledge. Like Scott he looks to the Greeks, but instead of Mētis Flyvberg opts for the Greek term Phronesis. Both Mētis and Phronesis refer to practical knowledge. While Flyvberg does not focus on international development, his suggestions parallel Scotts. If there is not a single reality to be mapped, but rather a flexible ever shifting reality, the danger is not inaccurate measurement but assuming a good measurement is fixed. Flyvberg follows Heidegger in arguing reality is not fixed being but changing becoming. What should a social scientist who is sensitive to a complex, ever changing social world do to best approach social problems?

1. Focus on values (2001: 130)
    a. Flyvberg argues that our values affect which parts of the shifting social world appear as relevant. Instead of seeking to avoid values (which is impossible), Flyvberg argues social scientists should be open about what values guide research. This is the same thing Bourdieu argues for when he argues sociology needs to be reflexive (1992)
2. Placing power at the core of analysis (2001: 131)
    a. Since there is not one single reality to be mirrored as accurately as possible, it is inevitable that particular interpretations and perspectives will result. Such perspectives are not a failure, rather the necessary simplifications of an ever changing reality. As such, suggestions for how to deal with the social world involve an element of power. Local

groups might not share the same perspective as aid agencies. Instead of assuming that scholars or aid agencies understand the issues perfectly, there needs to be a recognition that there is no complete knowledge and that an solution will represent an imposition of power from one group on another. This is not something that is avoidable, but acknowledging the role of power is essential to ethical action.

3. Getting close to reality (132)
    a. Like Easterly and Scott, Flyvberg argues that practical knowledge takes place in close contact with the issues in question. Conceptual knowledge achieved through distant learning (through historical analysis, statistics, etc.) may be helpful, but cannot precede the kind of practical knowledge gained from being closed the reality in question. The ivory tower often does not know better than the locals.
4. Looking at practice before discourse (134)
    a. Too often scholars depend on "the literature" to introduce them to the issues involved at the expense of real world experience. Again, the map cannot supersede reality.
5. Dialoguing with a polyphony of voices (139)
    a. Planners assume that they are gaining access to better, more accurate knowledge. As such there is a risk of shutting out other voices. If reality is ontologically fixed, the most accurate explanation is the best and all other perspectives must yield. If, as I have argued, Heidegger and Nietzsche are right in suggesting there is no one final, fixed

> reality, but rather reality is always changing then multiple perspectives are preferable, because they can yield a “fuzzy” picture instead of a too narrow one.

These are just some of the suggestions Flyvberg offers for how to improve the social sciences once the ontological and epistemological assumptions are recognized to be problematic. Scott, Easterly, Postma, Kaplan and many others have argued that it is time to rethink the approach that is taken to international development. I have covered enough of their criticisms and suggestions to give a general idea how international development can be improved. It is not my purpose to try to tease out from their suggestions a new general model for approaching development issues. Nor will I attempt to provide a fully fleshed out picture of practical knowledge. Both of these efforts are beyond the scope of this thesis. I refer to reader to the works of the many thinkers who have already done much towards these ends.

I have argued that international development is a part of the project of modernity which is based on problematic assumptions about epistemology and ontology. I have attempted to show how deeply enrooted these assumptions are in contemporary thought. These deeply entrenched assumptions help explain how, even though many development projects (and many social scientists generally) recognize the dangers of colonialism, often produce results that are disturbingly similar to the organizational efforts of the colonial period. I have also suggested that while Scott and Kaplan and others recognize this, the problem is deeper than they suggest. I think Nietzsche and Heidegger are correct that it strikes right into the heart of the Western tradition, all the way back to Socrates and

Plato—it starts with the ontological assumption that there is one true reality. There are many thinkers who have explored how to overcome this assumption and what scholastic and scientific research would look like in the aftermath. These thinkers are not all in agreement about what this would entail, but they all agree that it would require becoming more flexible and open-minded, more willing to cut across disciplines, less focused on method and more inclined to accept different perspectives. If the problematic aspects of international development are to be improved (as far as it is possible), the structure of academia needs to be changed. It is built on a series of assumptions that are highly problematic. Despite the many voices in opposition to these assumptions, the edifice they are a foundation for remains largely unchanged. These assumptions have shaped the structure of academia. It is not surprising to see that well meaning scholars and aid agencies repeat the same old mistakes. The majority of the scholars and scientists who are products of this edifice reflect fully its assumptions. The structure discourages them from thinking broadly and reinforced the Cartesian anxiety that leads to methodological fetishism.

Despite the criticisms of thinkers like Mills, Bellah and Habermas, sociology continues to be largely undemocratic and hermetically sealed off from the humanities. Mills attributes the staying power of the sociologist as technician to the ease that new social technicians can be trained in the "fine little mill of Statistical ritual" (1959, 72). It is much easier and less time consuming to train students to run regression analysis models than to make them competent philosophers and historians conversant in the many disciplines. Furthermore, the complicated nuances of comparative and historical issues

and approaches precludes the kind of clear eyed, straight forwards results that can be produced through statistical analysis. In terms of comprehensibility for the non expert, the interaction of clearly defined variables with a frank assessment of the degree of confidence in our results are the best way to get information that can be digested quickly and acted upon by those in power.

There is too much prestige, too much inertia, too much facility buoying abstracted empiricism to promote the kind of change Mills, Bellah and Habermas hope for. As Mills pointed out, scientific thought tends to see itself as natural. By this he means that it often doesn't understand the philosophical assumption it is built on. Only by exposing the ontological and epistemological flaws that underlie Western scientific thought does it become clear why there is a need to return to a democratic comparative historical approach. While there are morally compelling reasons for doing so, these morally compelling reason can be roped back into the fold. They can be taken for a need for better—and yet still fundamentally the same—science. Technology can be taken as the solution to technology. Only when the basic assumptions are attacked do the moral issues show up in a different light.

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