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January 2011

Online at <http://mpra.ub.uni-muenchen.de/29750/>
MPRA Paper No. 29750, posted 22. March 2011 / 00:26

Why Geographic Factors are Necessary in Development Studies

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Working Copy, January 2011

Comments Welcome

This paper proposes that the resurgence of geographic factors in the study of uneven development is not due simply to the recurrent nature of intellectual fashions, nor necessarily because arguments that rely on geographic factors are less simplistic than before, nor because they avoid racist, imperialistic, and deterministic forms they sometimes took in the past. Rather, this paper argues that geographic factors have been turned to once again because they are an *indispensable* part of explanation, playing a special role that has not been properly understood, a role especially crucial for the explanation of the inherently spatial questions that development studies seek to address.

The paper is made up of two sections and an appendix.

The first section discusses why geographic factors are necessary for explanations of uneven development with a brief example from the ‘institutions versus geography’ debate. The second section discusses why the reflexive rejection by social scientists of geographic and environmental factors is misguided, with a separate note on geography and geographers.

The ideas in this paper were in part arrived at inductively while surveying instances where social scientists in some way attempt to account for real-world locations/distributions of social phenomena (as opposed to discussing a social theory or process aspatially or with its distribution taken as a starting point). A number of these are included with discussion as an appendix.

I Bringing social theory down to earth

There are a number of possible reasons one might conclude are behind the resurgence in the use of geographic/environmental factors in development studies.

This resurgence, especially among geographers, is frequently viewed extremely negatively—as ill-conceived, uninformed, opportunistic,¹ even as ominous and dangerous (Blaut 2000, Merrett 2003, Sluyter 2003, Coombes and Barber 2005, Judkins et. al. 2008, O’Keefe et. al. 2010, Radcliff et. al., 2010). The resurgence could be simply due to the recurrent nature of intellectual fashions. Similarly, but more ominously, it could be due to underlying persistent ideologies that geographic factors are somehow uniquely suited to supporting.² Alternatively, they might be viewed as having become more palatable because in their recent form they are more sophisticated and either 1) in their increased sophistication avoid the worst aspects of over-simplicity and/or 2) avoid association with deterministic, racist, or imperialistic ideologies.

We believe none of these are the real reason for the resurgence of geographic factors in research on uneven development. Rather, modern research, despite vast increases in the amount and quality of data, ever more sophisticated theories, and the technological means to combine these, has nevertheless hit an insuperable barrier; research *cannot* advance without integrating geographic and environmental factors into social science research. This paper explains this view.

1.1. Anchoring social theory: Why exogenous spatial factors are necessary

As economists and others closely involved with international development agencies have made clear in recent years, despite many different approaches one policy after another has resulted in little economic gain and frequently caused

¹ ‘[O]ppportunists are able to achieve some renown by reviving environmental determinism as a quick and dirty integration of the natural and social sciences’ (Sluyter 2003, 817). David Harvey cites the ‘banal version of physical geographic determinism (of the sort peddled recently by Jared Diamond 1997 in *Guns Germs and Steel* or, on an occasional opportunistic basis, by the economist Jeffrey Sachs, with Gallup and Mellinger 1999).’ (Harvey 2011, 12)

² ‘[T]he essential common ground [between *fin de siècle* and modern geographic determinists] is in the *ideological* dimension of determinist theorizing: in the fact, in other words, that the argument from nature appears always to be deployed toward a recognizably programmatic end’ [Bassin refers to Ratzelian *Lebensraum*, nationalism, and Marxism]. (Bassin 2003, 27, emphasis in the original)

negative unintended consequences.³ Continued failure has led to a greatly increased openness to factors long ignored as ‘exogenous’ in development theory in the attempt to more fully capture the range of variation in factors thought relevant to development across the globe. Subsequently, datasets have grown dramatically in scale and scope in the past two decades, covering much of the globe and such diverse factors as measures of institutions and political systems,⁴ corruption,⁵ norms and beliefs,⁶ ethnolinguistic fractionalization,⁷ and geographical factors relevant to development.⁸ Additionally, factors thought to have long-term effects on development, such as colonial history, historical urbanization and population, migration, disease, and historical patterns of trade have also been increasingly quantified in cross-national

³ Making many of these critiques especially forceful is the fact that they come from ‘insiders’ such as Joseph Stiglitz’s (2000) ‘What I Learned at the World Economic Crisis’ and William Easterly’s (2001) *The Elusive Quest for Growth: Economists’ Adventures and Misadventures in the Tropics*, or those with otherwise ‘progressive’ views not inherently skeptical of government aid (a predisposition which sometimes undermined the force of the arguments of past critics of international aid) such as Maggie Black’s (2002) excellent *The No-Nonsense Guide to International Development*.

⁴ E.g., *Governance Matters III: Governance Indicators for 1996-2002*, (World Bank), *Polity IV Dataset*, (University of Maryland).

⁵ E.g., *Corruption Perception Index*, (Transparency International).

⁶ E.g., *World Values Survey 1981-2004*, (World Values Survey Association).

⁷ *Ethnolinguistic Fractionalization Indices*, (Roeder, 2001).

⁸ Extensive geographical datasets related to development have been especially associated with work from the Center for International Development (CID) at Harvard University. Examples include Mellinger, Sachs, and Gallup (1999) ‘Climate, Water Navigability, and Economic Development’, Masters and McMillan (2000) ‘Climate and Scale in Economic Growth’, as well as Gallup, Sachs, and Mellinger (1998) ‘Geography and Economic Development’, and Masters (2003) ‘Climate, Agriculture and Economic Development’, in *Land Quality, Agricultural Productivity, and Food Scarcity*.

datasets.⁹ However, as ever more social factors such as measures of culture, education, ethnic fractionalization, religion and so on are included in development studies a paradox becomes evident. If *everything* is endogenous, how can anything be treated as an explanatory independent variable? This problem was recently explicitly recognized by the political scientist Adam Przeworski:

The recent theoretical developments [in development studies] consist of endogenizing factors previously considered as exogenous (Acemoglu and Robinson 2001, Banerjee and Duflo 2003, Benabou 1997, 2000, Benhabib and Przeworski 2004, Bourgignon and Verdier 2000, Hoff and Stiglitz 2003, Perotti 1993, Saint Paul and Verdier 1996): inequality shapes institutions, institutions affect redistribution, both institutions and income distribution influence the growth of income, while the level of income affects both institutions and inequality. Yet if everything is endogenous, identification is impossible: everything is simply determined by the initial conditions, which may, in turn, be shaped only by geography. (Przeworski 2004, 20-21)

And indeed, there has been a sharp increase in both studies of uneven development that cite ‘initial conditions’ defined as geographic factors (examples in Ballinger 2008a, Ch. 1) or directly cite geographic factors. The sharp increase in the use of and statements that initial conditions are needed in development studies suggests that the

⁹ Extensive datasets have been developed using historical data from Angus Maddison’s *Monitoring the World Economy: 1820-1992* (OECD, 1995) and *The World Economy: A Millennial Perspective* (OECD, 2001) as well as research by Philip Curtin, Paul Bairoch and other demographic historians. These have been most notably used in the trilogy of highly influential works by Acemoglu, Johnson, and Robinson (and the numerous responses generated by this research): ‘The Colonial Origins of Comparative Development: An Empirical Investigation’ (2001, *American Economic Review*), ‘Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution’ (2002, *Quarterly Journal of Economics*), and ‘The Rise of Europe: Atlantic Trade, Institutional Change and Economic Growth’ (2005, *American Economic Review*); see also Rodrik et. al. 2002 and Rodrik 2003.

trend to endogenize every conceivable factor leads to an explanatory dead-end of ‘circular endogeneity’.¹⁰

Crucially, this circular endogeneity not only presents a problem for identification in econometric models but also for explaining the inherently *spatial* component of the question of uneven development. Many theories of uneven development such as core-periphery theories, dependency theories, theories of industrial agglomeration, and theories based on institutional differences posit some process that causes more agglomeration or development in one area and less in another. These seem to offer insights into the process of development. But there is a certain circularity to all arguments of this nature unless they also offer an explanation for why areas of high social capital, good institutions, or an agglomeration or ‘core’ is located where it is. For example, in core-periphery theory, why was the historical core not centered over Eastern rather than Western Europe? Or over Tajikistan or Mali for that matter? Europe could just as easily be the periphery to an Inner Asian or African core as the other way around. Core-periphery or dependency theories might explain complex relations between core and periphery, but only after assuming the ‘core’ is where it is in the real world. They must ultimately address the location of the core to meaningfully explain real spatial distributions of development. More recent, subtler theories of social capital or agglomeration may appear to overcome this problem when they show how local economies are where they are because of influence from local institutions or culture. However, these studies only push the question of real-world location onto other social factors. Why, then, is *that* local set of institutions or culture distributed as it is in the real world? The geographer A.J. Scott recognized this problem in the context of theories of high-tech clusters or agglomerations:

there can be no invocation of a privileged ‘independent variable’ in the form of some prior fixed set of local activities or attributes...which are supposed to anchor the entire locational process within a more durable spatial matrix. Such a

¹⁰ Note that the same problem has been simultaneously recognized in modelling in urban studies: ‘The problem one quickly faces in developing a simulation model of urban dynamics is that almost everything seems to be endogenous. Household location choices, firm location choices, real estate development choices, and governmental infrastructure and public service choices all interact dynamically.’ (Waddell 2005, 1)

procedure would in any case only pose the problem again: What then accounts for the geographical pattern of *these* activities and attributes? (Scott 1984, 25)

Peter Hall notes critically that this agglomeration-type of explanation of uneven development (note the similarity to Przeworski's observation on exogenous factors above) 'somehow lacks a first cause; it goes endlessly on, reproducing itself, but there is no suggestion as to the origins of change, either in the system itself or in its locational expression' (Hall 1998, 295). It seems that for explanations of *uneven* development to avoid circularity they cannot simply be made up of inherently *aspatial* and *endogenous* variables. They need *inherently spatial*, independent or *exogenous* factors that anchor aspatial social theories to real world locations/distributions to avoid circularity. Only geographic factors can fulfill this role.

Crucially, however, *geographic factors need not be strongly causally implicated in social theory*. They only serve to anchor larger social processes to real-world locations. Their spatial influence need only be relatively small, as it is later amplified by the path-dependent nature of development and cumulative causation, which are especially relevant in the long time periods involved in the study of uneven development.

Krugman links the concept of exogenous geography and 'anchoring' in a clear statement of the idea:

in many cases, aspects of natural geography are able to matter so much not because natural features of the landscape are that crucial, but because they establish seeds around which self-reinforcing agglomerations crystallize. So it is precisely the aspects of the economy that in principle allow history-dependent, multiple equilibria stories to be told that in practice give exogenous geography such a strong role. (Krugman 1998, 24)

However, despite explanations as to why the 'anchoring' function of exogenous geographic factors might be important, as by Krugman, and that explanations are unsatisfyingly incomplete without anchoring, as by Scott, Hall, or Przeworski, it is deeply ingrained even in those who explicitly study spatial aspects of development not to address the issue. For example, Scott and Angel write on industrial agglomerations that 'The main analytical issue here, however is *not so much how these centers came to be precisely where they are*, but how they subsequently grew

quite systematically' (Scott and Angel 1987, 878, emphasis added). Lovering warns that 'Although spatial research is concerned with the local, it should not be devoted to tracing geographical particularities for their own sake, although this is a temptation' (1989, 213). More recently economic geographer Ron Martin criticizes a deductive process-centered approach, the 'new' economic geography - whose models predict agglomeration and localization - for being 'unable to tell us *where* it actually occurs or why in *particular* places and not in others' (1999, 388, emphasis in the original). He goes on, however, to argue that 'as economic geographers have repeatedly shown, economic processes operate differently in different places...These differences cannot be captured in terms of a model's "initial conditions", but themselves require explanation, not simply on a unique case by case basis, but in terms of more general principles of spatial difference' (Martin 1999, 389). Martin rejects 'initial conditions', which are often geographic in nature (Ballinger 2008a, Ch. 1), and their real-world effects on unique cases and instead argues once again for a focus on 'general principles'. In later work Martin, as others, elides the question of real-world location with vague constructions such as 'Different specific institutional regimes *develop* in different places' and '*Once established*, such local technological clusters in turn generate further specialized local institutional systems' (Martin 2000, 80, 81, emphasis added). Regimes and clusters 'develop' and once established 'generate' but where this occurs in the real world is never accounted for.

1.2 The proper place of geographic factors: An example concerning colonial development

Being too simplistic was and is a major reason for the rejection of geographic factors, i.e., that monocausal explanations based on geographic factors cannot possibly have all the explanatory power attributed to them when social outcomes are so complex.

However geographic factors are not proposed here to have direct one-to-one relations to the complex patterns of development today. By way of illustration, consider Acemoglu, Johnson and Robinson (2001), which argues that patterns of disease causing high mortality rates among colonialists led to the creation of 'extractive regimes'. In areas where colonialists could not settle in large numbers because of high mortality rates, they instead established an elite whose function was

to extract as much wealth as possible for the colonizing power. The elite formed and maintained institutions useful for economic extraction and exploitation, and for concentration of power among the elite. When these areas of high settler mortality gained independence local elites took power, yet they maintained underlying institutional structures which have not been conducive to development in the long-term.

Thus, in their argument, geographic factors (in this case biogeography) did not directly cause poverty, yet distributions of endemic diseases¹¹ had long-term spatial effects that are still felt today through the mechanism of inherited poorly functioning and corrupt institutional frameworks; this condition has in turn been perpetuated by the stark difference in wealth and power between elites and the rest of society. Development economist Jeffrey Sachs has termed these types of path dependent effects ‘amplifiers’ (Sachs 2000). What is important is to note that these are generally not simplistic arguments based on direct effects of geographic factors. This is what sets this literature apart from earlier considerations of geographic factors rightly rejected for simplistic causal mechanisms.

Critically, however, what our paper hopes to show is *not* simply that geographic factors can be considered in more sophisticated ways and therefore avoid the criticism of over-simplicity, although this is a relevant point. What it is hoped can be shown here is that it has not been sufficiently theorized *why* geographic factors are especially salient for understanding uneven development. It is argued that the almost exclusive focus on social *processes* and hence what are ultimately endogenous factors has been harmful to the understanding of the real-world *location* of processes, and that the reason for this is that *the study of real-world location is a question fundamentally different from all others asked in the social sciences (i.e., inherently spatial); because of this difference there must be some exogenous spatially privileged independent factor invoked to explain where processes occur in the world.*

As example, consider the theory in Acemoglu, Johnson and Robinson (2001) again. It was offered as an example of how more recent theories utilizing geographic factors are more subtle than in the past. What is crucial for the argument here,

¹¹ In pre- germ-theory times, spatial patterns of endemic diseases were essentially outside of human control; to this day, centuries later, malaria and many other diseases such as dengue fever are still only semi-controlled (at best) by socially endogenous factors.

however, is the precise *role* the geographic factor plays in their framework. The processes that are important to the theory are extremely complex - the global demand for sugar, tobacco, and cotton, political processes that drove European colonization, and so on. Yet regardless of the complexities of these processes, what explains their *spatial* distribution is the real spatial distribution of a geographic/environmental factor, such as the endemic distribution of malaria. It is argued that there is always a 'spatially privileged independent variable' that can be related to the spatial pattern of any given process. Most important for reconceptualizing geographic factors and concerns about determinism in social processes, *these need not be otherwise strongly causally linked in arguments about the related social process.*

When geographic/environmental factors are considered at all, it is precisely the over-emphasis on them as strongly and directly causal in the operation of social processes that has led to their rejection. For example, Blaut writes: 'Environmental determinism...is the practice of falsely claiming that the natural environment explains some fact of human life when the real causes, the important causes, are cultural, not environmental' (Blaut 2000, 149). However, we need not strongly implicate geographic factors *in* a social process, while still being aware of the role they play in the *distribution* of that process. Malaria in no way caused the social processes of European expansion, global demand for tropical products, the shipping and organizational technology that developed and so on. Yet without considering the real-world spatial pattern of malaria one could study European politics and economies, global demand for tropical products, shipping and organizational technologies and so on endlessly in attempting to understanding uneven development, which indeed has been done, yet *never* understand the reason for the real-world *spatial* pattern these complex social processes assumed. On close consideration, this is the situation with every social process related to development, at both large and small scales. For this reason it is useful to decouple explanations of endogenous social processes from spatial influence arising largely exogenously to social processes, disentangling highly complex social arguments from what are often fairly direct and understandable spatial influences from geographic factors.

It may help to visualize this idea. McArthur and Sachs 2001 contains a number of simple causal diagrams summarizing various development theories (arranged by increasing complexity). For example, they summarize Acemoglu, Johnson and Robinson 2001 as arguing for causality running from geographic factors, to

institutions, and then to development in the first diagram below. (Their entire summary constitutes Figure 1 below; the short descriptions are by McArthur and Sachs):

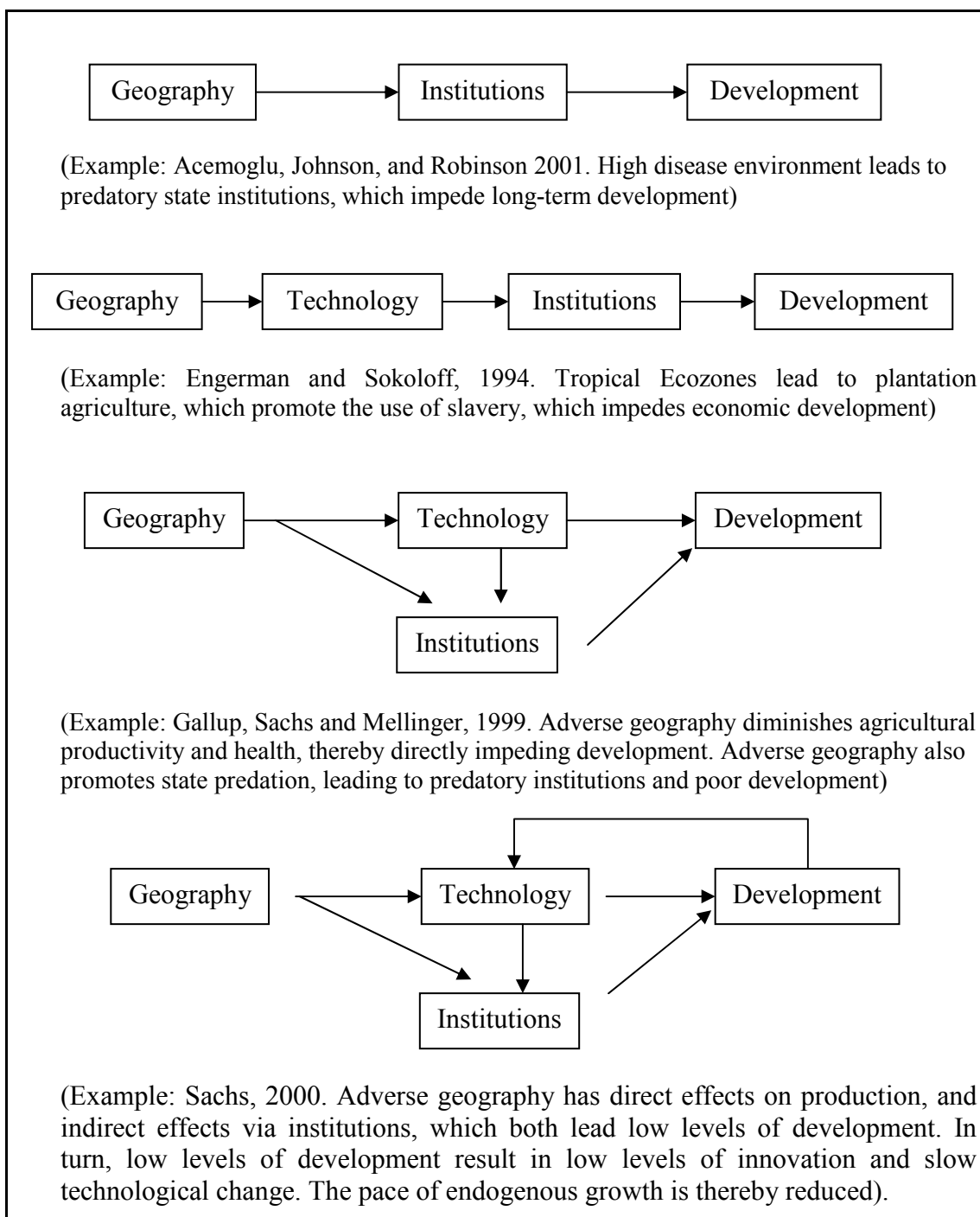


Figure 1 McArthur and Sachs 2001, Causal Schemas of Development Arguments

Causal diagrams and the theories they represent can of course become far more complex. However, the main point we argue here does not revolve around the

addition of more boxes or arrows, or arguing for different or more complex interrelations between these. Rather, we argue that the questions and answers above are *framed* in a fundamentally wrong way. As long-term factors with often very small, sometimes imperceptible year to year influences, geographic influence incrementally adds up over decades, centuries, and millennia to anchor social processes in one part of the world and not in another. Rather than causal diagrams such as those above, this might be diagrammed in the following way:

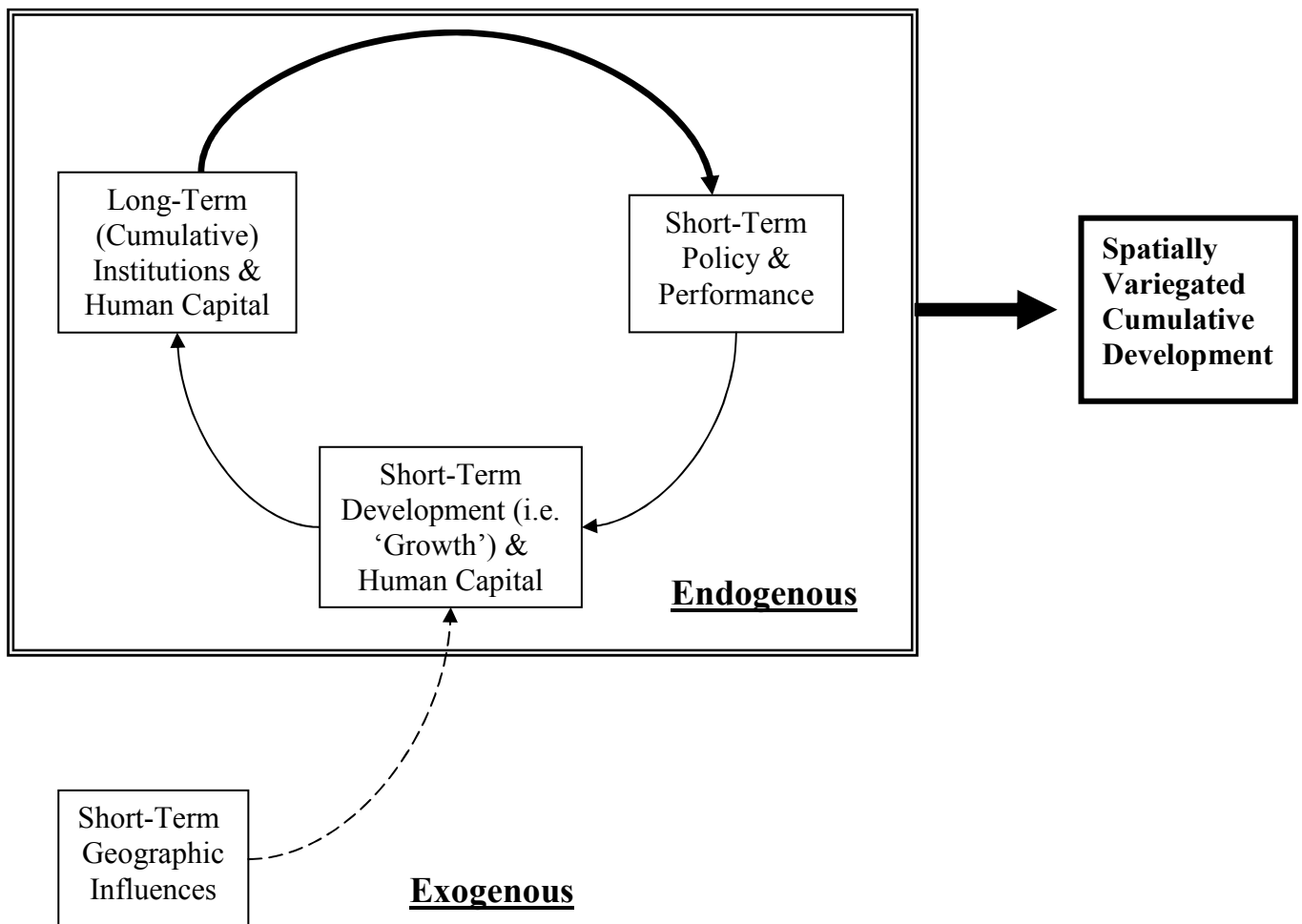


Figure 2 Causal Schema; Endogenous Social, Exogenous Geography Factors

Figure 2, rather than showing *more* factors or greater *complexity* in their interrelations, simply divides factors into exogenous and endogenous. The endogenous factors interact in complex ways that are not entirely understood. However, the exogenous spatial geographic factors have relatively simple and small

effects through incentives and constraints on individual decisions. Over time, the cumulative effect is the amplification of preexisting geographic spatial variation into patterns of social variation, the anchoring of social processes to some regions and not in others. One of the simplest yet most profound of these effects can be seen in urbanization. Historically, millions of individual decisions influenced by factors such as transport costs led to the spatial patterns of urban development. These have in turn been amplified by subsequent urbanization-related social processes (e.g., institutional development) following the earlier urbanization pattern (this idea is developed further in Ballinger 2008a, Appendix B). Transport costs, disease patterns, innate agricultural potential and other geographic factors have subtly shaped the spatial patterns of development over centuries through independently small constraints and incentives for individuals but cumulatively large spatial influence on development outcomes.

1.3 *Social scientists and location*

The questions surrounding uneven development, unlike others asked by social scientists, are *inherently* spatial questions. Without some real-world spatial input arguments about real-world patterns of development are circular. Surveying social science literature one finds that either real-world location/distribution is not accounted for at all¹² or geographic factors are found to have been relied on in some way.

In considering the class ‘all examples that can be found in which social scientists have attempted concrete explanations of why a process is located or distributed where it is’ a surprisingly small number of factors are found to be recurrent. Analyzing what these factors are and how they have been used is a useful step towards understanding *why* geographic factors are important, and precisely *what* role they play in explanation (this is part of a wider question on the role of initial conditions in explanation, see Ballinger 2008a, chapters 1 and 2).

¹² As Harvey notes, ‘economists typically place economic activity on the head of a pin.’ (Harvey, 2011, 12). The ‘new’ economic geography associated with Krugman, Fujita and others, in the tradition of Christaller, Lösch, Isard and Hotelling, only deals with ‘space’ deductively and in the abstract. Other social science research often relies on variegated data, but ignores the fact that the variation stems from underlying spatial differences (data from countries, states, regions, counties, Nuts II regions, and what are often spatially delimited ethnic or cultural groups); their *starting* point is the variation, which then leads to spatially abstract theoretical discussion.

In doing this, evidence from both geographers and other social scientists is important, although for different reasons. In the latter case, because social scientists and historians do not have any disciplinary ‘core’ leading them towards geographic factors, then examples from these disciplines help demonstrate that geographic factors must be *somehow* salient in explanations of real-world location/distributions when any factors other than geographic factors might just as well be proposed. In the case of geography, geographers since the 1960s have been particularly sensitive to any appearance of arguing geographic factors are causal in social outcomes (ideas ‘discredited amongst geographers for over fifty years’, Pawson and Dovers 2003, 11); hence explanations by geographers from about the 1960s on that have geographic components are especially interesting as they were presented *in spite of* acute awareness of their controversial nature within geography.

These examples are not chosen on the basis of being influential or from recent scholarship. They are the result of an extensive survey of social science literature from the 1960s to the present looking for *any* cases where a scholar has purposefully or inadvertently made some attempt to argue for why some social process is distributed in the real world as it is. The goal is a better understanding of *why* the factors chosen were chosen and *how* they are used.

Because of the length involved in describing even a small portion of these they are appended separately. The appendix is composed of several very briefly described examples as well as a few slightly longer discussions. The latter include examples from the geographer John Marshall (Ontario, scientific method in geography) and Richard Peet (discursive formation of New England). Interestingly, we even ran across a short example from the essayist George Monbiot (Ancient Greece, soils and social development). The approach to studying regional variation known as ‘new regionalism’ or ‘cultural economy’ is also discussed with an example from Alan James (high-tech regions, Salt Lake City and Mormon culture).

II Geographically grounded explanation, ethics, and society

Ballinger 2008d discusses ethical concerns by social scientists with determinism more generally, many of which are expressed with geographic determinism in mind. The aversion to suggesting geographic factors are causal in human affairs is deeply embedded in social scientific thought. However, it may be that it is precisely the

absence of geographic factors in the analysis of development outcomes that has allowed many morally suspect ideas concerning development to linger.

Ignoring geography means imagining a uniform world with no differentiation in physical characteristics (this is usually implicit rather than explicit in the aspatial work of much social science). It is hard to imagine by what mechanism socioeconomic and cultural variation would arise in a uniform world. In such a world, for the millennia that humans have been organizing socially and developing culturally, there would be little reason for trade, as there would be no difference in access to or types of resources, little reason to migrate or travel, as everywhere would be the same, little reason to adapt or innovate any differently than one's neighboring communities. This is the world implicitly assumed when geography is ignored.

However, in one way or another social scientists and historians *do* fall back on social variation to explain variations in economic and political organization. Explanations of differences in material well-being often have at their root the idea that either:

- 1) there is some deficiency in the culture, such as low 'social capital' or 'amoral familism'¹³, or a religion that fails to foster a work ethic, or a lack of institutions that internalize externalities and create incentives or
- 2) the culture is the victim of oppression or exploitation.

These two basic ideas cover the spectrum of right ('It's their fault') and left (dependency theories, postcolonialism). Hybrid theories can also be constructed, such as blaming a lack of institutions or social capital on some earlier period of oppression and exploitation (e.g. Putnam 1993). Nevertheless, all of these ultimately rely on social and cultural variation as reasons for political and economic variation, although this is not always explicit. That culture is the basis is clear in (1) above. That oppression and exploitation in (2) are also based on social variation is perhaps less obvious. Yet otherwise, how did the oppressing and exploiting society become wealthy or powerful enough to oppress and exploit in the first place? The only answer

¹³ This refers to Edward Banfield's groundbreaking 1958 study, often seen as the beginning of the modern social capital literature.

is that their society varied from others in some aspect of political, military or economic organization. Again, it is difficult to imagine how these organizational differences arose in a world without variation of geographic factors.

Contrast the right and left types of explanation with explanations of variation that ultimately lie in geography. Because geographical arguments ultimately do not rely on social differences, as no one is to blame for geography and very long-term processes, they do not logically support the framework of political ideologies or, except in their crudest forms, rightly serve political ends. The fact that they have in the past been used in these ways reflects on the easy reception of crude ideas and those who willfully accepted them, not on the appropriate methodology to arrive at cogent explanation. Rather, when the complexities of the amplification of early geographic differences into later social patterns are diligently traced they undermine the arguments of both left and right because they have as fundamental causes neither culture, nor oppression and exploitation.

The rejection of geographic determinism from 'left' perspectives is well-known, but the 'right' also rejects geographic determinism, objecting to the downplaying - inherent in explanations that rely on geographic factors - of the triumphalist view of 'Western culture' as the root cause of development. For example, Victor Davis Hanson writes:

Jared Diamond's bestselling *Guns, Germs, and Steel* argued that geography trumped culture, and that the current privileged position of the West was therefore mostly attributable to the advantageous resources in, and location of, Western countries, rather than to Europe's singular values. Despite the allure of such a politically correct exegesis...there were numerous criticisms of this determinist idea of natural accidents resulting in the present-day dominance of the West. ...Environment, far from being a precondition for Western success, was often almost irrelevant to it. (Hanson 2005).

Regarding determinism¹⁴ more generally, the banishment of the concept from the modern social sciences is due precisely to the fact that its rejection is one of the few areas where both right and left seem to be in agreement. The religious right objects to

¹⁴ Determinism however defined; for the purposes here its rejection is the point regardless of how it is defined by those rejecting it.

determinism (and its twin concept, reductionism, see Wacome 2004) based on beliefs that it undermines religion, while they as well as many strands of the social and Burkean conservative and classical liberal/libertarian right reject determinism for numerous reasons - it undermines the 'positive liberty' of Isaiah Berlin, the 'natural law' central to some conservative positions, and the triumphalist individualism central to the traditions associated with F.A. Hayek, for example. The ultimately apolitical nature of geographical explanations (properly used) has brought them scorn from many political sides, both right and left, and goes far in explaining their absence in much modern political and economic literature. Rather than geographic determinism, it is precisely subtle 'uniform world' assumptions themselves that allow for the ongoing left-right dichotomy in the debate on economic and political performance to continue.

Clearly the world is not marked by uniformity. Stemming from still earlier uneven antecedent and initial conditions (Ballinger 2008b), the world shows extreme variation in every aspect of its climate, altitudes, length of days, angle of sunlight (affecting photosynthesis rates), mineral deposits, soil types, wind currents, ocean currents, ocean temperatures, ocean salinity, seismic activity, access to navigable water, access to fresh water (for irrigation), rainfall intensity, rainfall regularity, which all further lead to variation in flora, fauna, different population densities, disease patterns, urbanization patterns and the location and activity of cities, trade patterns, migration patterns (including human migrations in the past and to some extent today) and many, many other variables, shaping incentives and constraints on millions of individual decisions over millennia.

Far from being unethical, observations of different organizational responses to highly varied environments clearly demonstrate the genius of *all* human cultures in adapting to limits imposed by geography and seizing unique opportunities presented by geography. Ignoring these factors ensures that political and development theories remain incapable of fully explaining the inequity of global wealth distribution. More dangerous still, it further ensures that evidence needed to refute simplistic cultural and racist ideas of unequal political and economic performance are not developed, paradoxically leaving room for those who would blame cultures themselves.

2.1 Humanist geography and geographic humanism

In this time of heightened concern for the environment it may also be wise to reflect on the ethical-ecological implications of downplaying the role of ‘the natural’ in ‘the social’. The problems this anthropocentric dualism pose to the social sciences have been pointed out many times (Worster 1990, Freudenburg 1995, Murphy 1995, and Steinberg 2002 are among the better modern examples), and there are innumerable strands stemming from Aldo Leopold, Arne Naess and others (e.g., bio- and eco-regionalism, deep ecology), as well as far older strands within geography (from George Perkins Marsh back to Humboldt and Herder). As the geographer Donald Meinig noted, geography is in this sense an inherently ecologically oriented and philosophical enterprise. ‘Geography has sometimes been represented as a kind of moral philosophy, primarily in the sense that those who have a deep fascination for the earth needs must have a special concern for the care of the earth.’ (Meinig 1992, para. 40).

Understanding the human impact on the environment has become a central concern, with geography especially well-placed to be central in this endeavor. ‘An old definition of geography has been coming back into favor: the study of the Earth as the Home of Man—or, as we now say, of Humankind. We have recently become aware that the Earth as Home is in alarming condition, and geographers, like many others, are eager to tackle urgent problems of home repair and of remodeling the way we live’ (Meinig 1992, para. 40).

Yet the human-environment basis of geography is still deeper, the connection between human and Earth more fundamental than just the self-serving pragmatic concern with not fouling our own nest. Not only does ethical concern for the environment come from a more immediate connection with the Earth, but through a better understanding of the very longest-term interplay between humans and the Earth. (An emphasis purely on the ‘environmental’ by some ‘deep ecologists’, however, while forgetting humans are a part of nature as well can become a kind of ‘anti’ humanism, as famously argued in Bookchin 1987; similarly an emphasis on ecoregionalism, like many ideologies, can be perverted; see Olsen 1999). Our emphasis here, however, has not been to argue for a particular environmental ethics, but for a clearer understanding of the need for geographic factors in explanation. Works such as Pomeranz 2000 and Davis 2002 demonstrate that while avoiding

unethical forms geographic factors can be used in causal explanation in ways that seem to offer significant insight into social outcomes.

As Meinig observes on the relatively modern concern for human impact on the environment, ‘I have no practical skills to put to use on such projects. I can only add my small voice to the few urging the need, as well, for a much longer perspective on such matters, a far better understanding of how we got to where we are. And that sort of historical investigation must surely lead to a sobering meditation on the human situation on this earth’ (Meinig 1992, para. 40). From the long perspective, the Earth has shaped humans far more than humans have shaped the Earth. An understanding of this, of how we got to where we are, leads to an appreciation of the human-land connection still deeper than short-term and merely pragmatic concerns about the environment.

A note on geographers and geography

Geographers, like the mythical giant Anteus, derive their strength from contact with the earth

Hart 1982, 24

Geographers especially seem to fear being associated with ‘simplistic’ explanations based on geographic factors, of being identified with nothing more than ‘neocolonial gazetteering, capes and bays, world capitals, and the socio-ecological determinism of *National Geographic* television specials’ (Eliot Hurst 1985, 72). This attitude became so widespread within human geography that Stoddart complained that ‘Geographers have forgotten—it is extraordinary to have to say so—that some parts of the Earth are high, others low; some wet, others dry; some desert, others covered by forest and grassland and ice’ (Stoddart 1987, 331). This has been the case since at least the mid-1960s, when Morgan and Moss could already write of geography that ‘In a study which claims to attach so much importance to the relationships between man and physical environment, the neglect of soil, human nutrition, and disease is extraordinary’ (Morgan and Moss 1965, 340). Susan Hanson, in ‘Healing the Rift Between the Nature-Society and Space-Society Traditions in Human Geography’ (1999) asks ‘Why did geographers think they could arrive at useful generalizations only by erasing nature? Some geographers see the answers to these questions in embarrassment over the discipline’s earlier excesses of environmental determinism,

i.e., that geography's previous bout with generalization had so prominently featured the role of the physical environment that geographic theory could regain credibility only by rejecting environment outright (Abler 1987; Fitzsimmons 1989; Kates 1987)' (Hanson 1999, 136).

The political economist Samir Amin (1976, 10) 'dismissed geography as having failed to answer its basic problematic—the relationship between the social formation and its natural environment' (in Salih 1984, 79), a 'failure' that was of course purposefully brought about as geographers moved away from influence of the latter on the former. Richard Hartshorne, an important figure in this movement in the 1940s, nevertheless concluded:

In no small part, the ultimate goal of geography is to provide scientific description of the way in which the originally unorganized areas of the earth are organized into various kinds of functioning regions (Hartshorne 1960, 53).

Similarly, on the evolution of social variation, Carl Sauer states that 'One of the fundamental questions in all social study is how to account for the rise and loss of institutions and civilizations' (Sauer 1940). Although Sauer is also viewed as one of the central figures in the move away from explanation of social outcomes using geographic factors¹⁵ he clearly saw variation in social organization as resulting from variation in the natural environment:

¹⁵ Both Hartshorne and Sauer are considered foundational in the move of geography to views that were 'a complete reversal of environmental determinism' (Castree et. al. 2005, 134).

The culture area, as a community with a way of living, is therefore a growth on a particular ‘soil’ or home, an historical and geographical expression. Its mode of living, economy, or *Wirtschaft*, is its way of maximizing the satisfactions it seeks and of minimizing the efforts it expends. That is perhaps what adaptation to environment means (Sauer 1940).¹⁶

However, since Sauer wrote in the 1940, as Stoddart and Hanson emphasize, there has been an almost complete withdrawal by geographers from social questions that might involve geographic or environmental influence on society. This paper works from the perspective that these questions concerning the long-term development of society should properly be in the realm of geography as much or more than any other discipline, and that reclaiming this area of study in, addition to human impacts *on* the environment, is one way of further uniting geography around a central human-land theme as well as improving its academic status and visibility to the public.¹⁷

B.L. Turner asks ‘If geographers find simplistic the spatial claims of Krugman (1997) and Sachs (e.g. Gallup and Sachs 1999) or the human-environment notions of Landes (1999) and Diamond (1997), we might wish to pause and reflect on at least two questions. Why does geography repeatedly abdicate powerful ideas developed or nurtured within its ranks, abandoning them for rediscovery and reinvention by other fields of inquiry? Why are these reinventions, despite our labeling them simplistic and even erroneous, taken seriously by the academy and public at large...?’ (Turner 2002b, 428). Reviewing Diamond (2005) Ron Johnston similarly observes that ‘As a late interloper he has stolen our ground, presenting a wide audience with the sort of book that we are forever bemoaning that geographers should but do not write...He is getting geography a public profile for us’ (Johnston 2007, 410). We would argue that

¹⁶ Sauer’s language suggests incentives and constraints are, cumulatively, the cause behind social adaptation, language similar to both modern evolutionary and economic approaches to the study of society. Decades later economic historian Douglass North echoes Sauer, stating that ideological differences ‘emerged primarily from the diverse geographic experiences of groups contending with their environments and evolved into different languages, religions, customs, and traditions’ (1982, 209).

¹⁷ Numerous modern geographers have argued for an increase in attention to human-environment interaction in various ways (e.g., Guelke 1989), but seldom for the use of geographical factors in the explanation of social outcomes.

the inherently satisfying nature of explanations that break the circularity of aspatial endogenous factors is precisely the reason work such as Diamond's has been well received by non-geographers. Properly used, and in light of a better understanding of the role of geographic factors in explaining spatial distributions and in the understanding of contingent local, context-dependent outcomes, geographic factors can be integrated into the study of society; indeed, they have an indispensable role in grounding aspatial social theories in the real world.

Appendix A

As mentioned in section 1.3, it is useful to consider as a class examples where some explanation is given for why a social process is located or distributed as it is in the real world. In doing so the possible factors can be observed (section A.1). Section A.2 discusses these further with a final note on 'cultural economy' approaches to regional variation.

A.1 Post 1960s examples where explanation of real-world location is attempted

Attempts to anchor social theories to real-world locations (rather than beginning with variation and studying it or discussing theory aspatially) are relatively few considered as a percentage of the vast social science literature. But of course given this vastness there are nevertheless numerous examples.

A.1.1 Examples in the social sciences outside of geography

Migration is often of central importance in explanations of regional variation and is frequently related by scholars to the push or pull of some environmental factor(s) such as soil quality or climate change. For example, the specialist in empires, Richard

Drayton, summarizing reasons for imperial expansion, so important to understanding many spatial patterns of modern society, writes ‘The demand for [foreign resources], and thus the lunge outwards of Vikings, or Spanish hidalgos, or Zulus, may be the expression of some new environmental pressures, population surges, agrarian crises, ages of ice or drought’ (Drayton 2004, 19).

The economist Charles Kindleberger (1978) cites a number of historical accounts of political and economic variation that rely on underlying variations of agricultural potential. The relevance and historical breadth of his examples make an extended quote worthwhile:

Ricardo made clear long ago that not all land is equally productive. Rich land that earned large rents to be captured by the aristocracy in whole or in part was matched at the other end of the spectrum by no-rent land that was unable to support nobility. Weber observed that in ancient Greece land in the plain accumulated in the hands of nobles, while the hillsides that could not produce a rent were everywhere held by the peasantry. Braudel made similar observations of the Mediterranean in the Middle Ages, noting that mountains made for democracy, while plains were suited to the aristocratic form of government...Differences among nobles also frequently related to the quality of the soil. The Junkers in the north and east of Germany were originally relatively poor and knew how to milk; in Bavaria, nobility did not undertake farm work. ...In southern Germany—Türingerwald, South Mecklenberg and the Schwarzwald—there were no nobles because the soil was thin and a surplus could be acquired only from extensive holdings....Joseph Marshall, a British civil servant traveling through Germany in the eighteenth century, noted ‘It is always to be remarked that the gradations of freedom are ever to be found in mountainous countries; in general such are free; but even under absolute monarchs they enjoy more liberty than the subjects of the same prince who inhabit plain countries...’ ...Rappard examined the topography of Switzerland with its separate cantons prior to confederation in 1848 and found democracies in the poor Alpine districts (Uri, Schwyz, Unterwald, Zug, Glaris, Appenzell), patrician aristocracies in the plains, corporative oligarchies in commercial cities, and an assortment of monarchies and aristocracies, ecclesiastical and secular, absolute and qualified in mixed cases (Kindleberger 1978, 168-169).

Remarkably, these associations of soil type to socioeconomic organization observed long ago find support in similar modern geological research, described here by the essayist George Monbiot:

Professor Greg Retallack [geology] has spent much of the past few years taking soil samples from the sites of the temples of ancient Greece. He has stumbled on a remarkable phenomenon. There is a strong link, challenged by only a few exceptions, between the identity of the god worshipped at a particular temple and the temple's location. Where Artemis or Apollo were celebrated, the soil was of a kind called a lithic xerept, where montane scrub suitable only for nomadic herders grows. Nomads living on soils called xeralfs, by contrast, worshipped Hera and Hermes. Subsistence farmers cultivating soils called rendolls built temples to Demeter and Dionysos, while fluent soils capable of supporting large farms lie beneath shrines to Hestia, Hephaistos and Ares. The gods of ancient Greece, Professor Retallack suggests, "came not from an imaginary poetic city on Mt. Olympus, but personify ancient local lifestyles." The ancients were worshipping their own means of subsistence. (Monbiot 2005 on Retallack 2003, similar research later published as Retallack 2008)

Monbiot even constructs his own theory on this research. 'My untested hypothesis is as follows. The peculiarities of the Abrahamic religions – their astonishing success in colonising the world and their dangerous notion of progress (now inherited by secular society) – result from a marriage between the universal god of the nomads and the conditions which permitted cities to develop. The dominant beliefs of the past 2000 years are the result of an ancient migration from soils such as xerepts and xeralfs to soils such as fluvents and rendolls.' (Monbiot 2005)

These are not isolated examples. The research of economists, political scientists, anthropologists, and historians is usually either aspatial discussion of some social process, or takes as given the underlying spatial variation in social data. However, when linking these processes to a real-world location or distribution *is* attempted there is some underlying spatially varying geographic/environmental factor ultimately relied upon in some way.

A.1.2 Examples from Geographers

An example similar to those above is found in an observation on immigration to the United States by two physical geographers researching variations in soil fertility:

Each wave of pioneers had to choose a place to settle, often without clear guidelines. Reports of successes and failures were passed on to newcomers, who used the information to help them choose their land...Immigrants to New England were advised to find level and stone-free fields; those crossing the Appalachians told each other that nut trees grew on the soils that would prove best for crops; Southern planters were attracted by the dark soils of the Alabama Black Belt; migrants to central Kentucky took a decade to learn to discriminate between the Outer Bluegrass and the topographically similar but less fertile Eden Shale hills; in Michigan and Illinois, settlers discovered that treeless soils were not necessarily barren; in the Plains States, they found ways to live without a nearby woodlot; and in Wyoming, access to easily transported water proved to be more important than the texture of the soil. In time, Americans learned some basic rules about land evaluation in each part of this vast continent...Those early decisions about the quality of land were fraught with danger, because a bad choice could mean starvation (Gersmehl and Brown 1986, 480).

An example anchoring a posited social process relying on migration, soil types and other geographic factors is by the geographer John Marshall. He seeks to give a clear example of how geographers use the scientific method for explanation in *The Future of Geography* (1985). The theory Marshall considers is that population density is a function of the number of opportunities in an area for earning a livelihood. Areas of agricultural surplus should be more densely populated and the theory 'can be further developed by noting that areas of productive farmland also support market towns, and that these same areas, being well peopled, are more likely to attract manufacturing industries than districts where population is sparse. The growth of towns and manufacturing will lead to an even higher level of population density' (Marshall 1985, 125).

The causes of the population distribution in Ontario are in part due to the normal gradient of decreasing rural population from south to north in northern latitudes

corresponding to agricultural productivity. Another key factor is the low productivity of soils on the Canadian Shield: 'Most of northern Ontario lies on the Canadian Shield, an extensive area of Precambrian rock which was largely stripped bare of soil by the action of continental ice sheets during the Pleistocene glaciations. Southern Ontario, in contrast, was a region of glacial deposition rather than erosion, and here the soils are capable of supporting prosperous farms' (Marshall 1985, 125).

By using the methods Marshall proposes, the soil and latitude combinations of Ontario accurately predict the relative populations of fifty of the fifty three administrative districts of Ontario. The three areas that do not match the prediction of the theory are a southern administrative area, Manitoulin Island, that has lower than the predicted population and two northern areas, Muskoka and the Sudbury Basin, that have higher than expected populations. Marshall's main point is to show that anomalies do not overturn theory; the three anomalies are thus explained: The relatively low population of Manitoulin Island is due, suggests Marshall, to its (transport related) isolation, the higher than expected population of Muskoka is due to its status as a resort area, and of the Sudbury Basin because it has one of the world's richest concentrations of nickel and copper and hence a large mining community. Thus the unexpectedly high population of the Sudbury Basin is directly explained by the exogenous factor of the location of minerals. There are social dimensions to the anomalies of Manitoulin Island and Muskoka, such as the location of land and water transport routes, and in the case of Muskoka, the aesthetic values of society. Crucially, however, these are *spatially* anchored by the exogenous geographic factors of the real-world location of the lakes and waterfalls of Muskoka and their proximity to Toronto, and the relevant land and water transport routes themselves likely have important geographic determinants as well.

Marshall has chosen a single example, thus presumably his best, to show how to answer a question about the real-world distribution of a theorized social process in Ontario, Canada. All of Marshall's factors, including those that explain anomalies, turn out to be related to real-world variation in environmental and geographic conditions.

The ubiquity of anchoring

Even approaches not usually associated with an emphasis on causal argumentation anchor their ideas with geographic factors to the extent they are anchored at all. For example, since immigration and soil were both considered together above, consider a ‘hermeneutic’ point of view taken by Peet (1997). ‘The Cultural Production of Economic Forms’ discusses the development of the ‘New England discursive formation’. One finds that the *location* of this process is anchored by the conjuncture of immigration¹⁸ and (a shared view of) a particular local environment that marks the boundaries of a shared, if imagined economy. Peet cites one New Englander who describes ‘the rock bound region of New England’ and the stories these people tell about themselves are shaped by what Peet describes as ‘a glaciated land where winter lasts fiercely for five months, and intermittently for seven months of the year’ (40). The social process of discursive formation Peet discusses is anchored *spatially* in the conjuncture of particular immigrants in an area of a particular soil structure and climate. Even in this very different type of geography (citing Foucault, Castoriadis, Habermas, and Bourdieu), if there is any spatial anchoring at all it is based on the familiar categories of migration and local geographic factors.

A.2 Origins and diffusion

The geographer Donald Meinig is an exception among many post-1960s geographers in that he explicitly set out to explain real-world patterns of social phenomena rather than only describe them or utilize them as data in social theory. On how to go about doing so Meinig observes:

we must ask two fundamental questions: (1) why do major cultural patterns and movements begin where they do (the problem of the ‘culture hearth’), and (2) how do they spread to other peoples and areas (a problem of spatial diffusion)? (Meinig 1978, 1189)

¹⁸ In particular, the expansion of international Calvinism ‘brought the Dutch to New Amsterdam (later New York), French Huguenots to New York, South Carolina and Massachusetts, Scottish Presbyterians to the Middle Colonies, and the Puritans from England through the Netherlands to New England in 1620’ (Peet, 1997, 40).

In the examples above from economists, historians, and geographers one can see the importance of factors related to variation in agricultural productivity and the importance of migration. Further examples link spatial variation in agricultural productivity, transport costs, and biogeography—via intermediate spatial variation in population density, urbanization, and institutions—to more recent economic and political variation.

A.2.1 Long-term development of social variation

We have already seen some examples of diffusion (through migration, e.g., Drayton's emphasis on cultural spread from imperialism, Peet on immigration etc.). This brings us to Meinig's other factor, the 'culture hearth' and the longer term questions of origins of cultural variation.

The work that is illuminating the longest-term origins of patterns of cultural variation has often been (because of its extraordinary complexity) a multidisciplinary collaboration of archaeologists, historical sociologists, linguists, and anthropologists, with, for example, promising collaborations between biologists and linguists in mapping genes and languages. Examples of the latter include Barbujani and Bertorelle (2001) tracing the origins of European cultural variation, Bamshad, Kivisild, Watkins et. al., (2001) tracing the ancient ethnic roots of Indian castes, or Gresham, Morar, Underhill et. al. (2001) on the origins and spread of the Roma. Rogers et. al. (1991) trace the origins of linguistic variation in native North Americans to the biogeographic variation caused by Ice Age refugia of flora and fauna. These collaborations, many of which unashamedly cite geographic factors as causal in their explanations of geographic distributions, are finally shedding light on the very longest-term origins of social variation, on geography's old questions on 'culture hearths'. Eventually, tying the discoveries of these research areas to the cultural and institutional variation at the root of many economic and geographic theories promises more intuitively satisfying, non-circular explanations of these questions. While beyond the scope of the present work, consideration of these possibilities is increasingly realizable and a promising direction for future research.

Variation in urbanization and institutional or political development are tied to underlying geographical factors in numerous ways. One important factor, for

example, is the spatial variation of population. Spatial variation in population density is thought to be closely related to various underlying factors such as:

- spatial variations in transport costs (see Ballinger 2008a, Appendix B).
- geographic factors related to agricultural productivity (Pounds and Roome 1971; Luck 2007)
- continental physiography and climate (Small and Cohen 2004)

Spatial variation in population density in turn underlies subsequent spatial variation in more complex aspects of society. For example, Goldstone 1992 associates patterns of Eurasian population change with waves of Eurasian revolutions and political development. Technological invention has been associated with high population levels (Kremer 1993; Klasen and Thorsten 2006; Algaze 2005 and 2010 associate population density with the development of increasing returns industries and institutional development even in *ancient* societies). Regions of historically high population densities are associated with *less* income inequality today, (Sylwester 2003), perhaps because institutions related to dealing with large populations were conducive to the development of ‘good’ institutions.

Spatial variation in transport costs also influenced spatial patterns of trade with profound social and institutional consequences. Areas with high levels of trade experienced the demographic transition earlier and differently than areas with low levels of trade, with the effect of strongly amplifying the development differences between areas of high and low industrialization and locking very high population areas into unskilled labor-intensive industries (Galor and Mountford 2008). Furthermore, the variations in agricultural productivity and transport costs were central to subsequent patterns of urbanization—literally the ‘civilization’ so central to institutional, social and cultural development. Ballinger 2008a, Appendix B expands on this relationship; also see Bairoch 1988 and van der Woude, Hayami, and De Vries 1990).

A.2.2 A note on ‘new regionalism’/‘cultural economy’ and regional variation

One branch of economic geography is especially concerned with regional variation, particularly high-tech clusters, because they are often viewed as central to modern economic development. We turn to this now because the type of geography

that has developed to study these regions, with an intense focus on regional institutions and culture, might seem to explain spatial variation without reliance on geographical factors.

Within (especially British) geography various related approaches—‘new regionalism’ and ‘institutional geography’ (Amin 1999) and more recently ‘cultural economy’ (see Amin and Thrift 2003 for examples and an overview)—have been popular in the study of regional variation. Similar to and in part developing from the ‘CURS’ (Changing Urban and Regional Systems) project in the United Kingdom and work associated with Doreen Massey and the ‘localities project’ in the 1980s (Massey 1978, 1979, Cox 1992) cultural economy and new regionalist approaches are based on largely qualitative, intensive methods (that is, focused on small regions rather than extensive or international comparisons), where institutional or cultural differences between regions are studied to understand how these lead to different regional outcomes. Like the intensive work associated with Doreen Massey and the ‘localities project’ the detailed nature of cultural economy might give the impression that real world location/distributions are being explained. However, although this research may usefully show in greater detail mechanisms of micro-macro interactions (micro-macro integration has likewise been considered a major yet unachieved goal among economists), these types of studies explain spatial distributions of socioeconomic factors through reliance on the spatial distributions of *other* endogenous cultural and institutional factors, and thus do not resolve the problem of circular endogeneity.

Some geographers have noted the logical problems that inattention to cultural and institutional development present for explanation. Gertler observes that ‘proponents of [social and cultural arguments] have adopted a surprisingly unsophisticated understanding of how culture is formed and changes over time’ (Gertler 1997, 51) and cites Sayer and Walker (1992) that ‘culture is often misrepresented as something ethereal and eternal, divorced from historical material practice’ (178). Perhaps Gertler comes closest to voicing the concern that if spatial (regional, national) variation in culture or institutions is used to ‘explain’ spatial variation or regional differences in economic outcomes, then a full explanation also entails an understanding of the origins of the variation in culture itself: It is ‘important to consider the provenance of the very institutions which we have implicated as having so much power to shape corporate and regional practices....[and] not to treat institutions as if they were “carved in stone” or inherited from on high’ (Gertler 1997, 57) and ‘while it is

important to assert that cultural characteristics are much more than “mere epiphenomena,” it is also important to examine the process by which cultures are actively produced and reproduced by social practices and institutions over time’ (Gertler 1997, 51). A critical difference here from Gertler, however, is that Gertler views institutions as created and changing significantly in the short term (‘produced and reproduced’). Yet it is precisely this view that has been called into question by studies that show the resilience of social and institutional patterns over the very long-term (e.g., Sowell 1996, 1998). As Ron Martin states: ‘By their very nature institutions are characterized by inertia and durability...Institutions are characterized by “path dependence,” that is they tend to evolve incrementally in a self-reproducing and continuity preserving way’ and ‘institutions are therefore important “carriers of history” ’ (Martin 2000, 80).

Cultural economy arguments on culture and institutions sometimes seem to argue that culture ‘causes’ institutions (‘produce and reproduce’), other times that institutions cause culture. Gertler says ‘I have endeavoured to show how traits and attitudes we commonly understand as being part and parcel of inherited cultures are themselves produced and reproduced over time by day-to day practices that are strongly conditioned by surrounding social institutions and regulatory regimes’ (Gertler 1997, 55). This is surely true, but still does not explain the spatial variation of social institutions and regulatory regimes. The process of influence between culture and institutions seems inseparable, with both affecting each other from their very origins. The only way to account for the *spatial* variation in these seems to demand at *some* point spatially varying exogenous factors.

An example is the study of the regional economy of Salt Lake City in James (2003), a good representative of the cultural economy approach to regional development differences. Like Saxenian (1994) and Gertler (1997), James shows ways culture affects a regional economy, in this case Mormon culture vis-à-vis business practice and innovation in Salt Lake City. He demonstrates that in the context of the existing high tech cluster in Salt Lake City there is a set of shared social practices, norms and values that cause the Salt Lake City cluster to perform differently than other high tech clusters, and more importantly, in detail how mechanisms of cause and effect operate.

James (2003) shows that in part the wider pattern of regional economic performance in the western United States is shaped in one area by an underlying set of

pluralistic social practices, shared norms, and values; it goes a long way towards clarifying how, precisely, these shape that area. But the area itself, the reason for the underlying *spatial* pattern of pluralistic sets of social practices and shared norms and values, is not addressed at all. As such this does not, nor is meant to, explain the spatial variation in the wider regional economy. However, problems arise when these type of explanations are thought of, because of their ever greater detail, as somehow resolving the problem of circular endogeneity.

While no explanation can ever be complete, an understanding of the spatial pattern of regional variation would likely include consideration of factors related to the development of Mormon ideals, and since these did not occur in the Salt Lake City area, then the factors in the region where they did develop. Also important is an understanding of the cultures of the points of origin of immigrants to Salt Lake City, and the early opportunities and restraints of endowments on development in Salt Lake City. Key considerations would likely include both the origin of sets of social practices and reasons for the growth of particular kinds of industries in certain areas. Where migration has been central to the formation of the existing population in a region, reasons for this migration are also a factor, and the cultural characteristics of the region must at least to some degree be sought in the culture of the point of origin of the immigrants (Sowell 1996, 1998; see also Olson 1996).

For example, the origins of Mormon culture are in some sense understandable, with roots in a specific set of circumstances that led not just to Mormonism but to an unusually high number of new religions and political movements, some similar to early Mormonism, including in details such as polygamy. Consider that in the same region of New York and time period that saw the development of Mormon ideas (this account of western New York State is adapted from Lane [2003] and related World Book [1997] articles):

- the prophet Handsome Lake led the Seneca to found a renewed version of the traditional Longhouse religion
- radical Shaker communities flourished in the region
- a visionary ‘Quakerism’ of ‘Universal Friends’ was founded in Penn Yan, New York
- ‘New Age’ religion in the United States (and the popular idea of the ‘séance’) traces its roots to the followers of the Fox sisters in Rochester; to this day one of the world’s largest ‘Spiritualist Communities’ is in Lilydale, near Rochester

- the Chautauqua Methodist revivals became renowned throughout the region (and to this day)
- the Oneida Community flourished from 1848, including the practice of ‘complex marriage’, a form of polygamy
- Frederick Douglass, a former slave instrumental in the abolition of slavery and black rights, wrote and distributed his (radical for its time) newspaper, *The North Star* in Rochester
- the Underground Railroad stopped in Seneca Falls, where the first Women's Rights Convention was also held and Elizabeth Cady Stanton and Susan B. Anthony founded the American suffragist and feminism movements.

It is hard to imagine that this high spatial concentration of radical social and religious ideas was entirely random. There seems to have been something in this particular region and time period promoting rapid change, often thought to be related to the construction and opening of the Erie canal and the rapid social and economic change it entailed.

Just as the roots of Mormonism seem to be grounded in exceptional local circumstances, so too the roots of industry in Salt Lake City. Early on copper mining and a chemical industry were important; the area still has the largest open-pit copper mine in North America in nearby Bingham Canyon which saw large scale mining from 1906 (growing quickly in the first world war) and Great Salt Lake itself was and still is ‘mined’ for chlorides, magnesium, and potash, and is responsible for the early and ongoing chemical industry in the area. These in turn are largely what led to the military investment in the area in the Second World War and subsequent military investment similar to that which has been crucial to the Los Angeles, San Diego, San Francisco Bay, and Boston area high tech clusters.

The development of Salt Lake City’s current sets of social practices, values and norms also lies in Northwest Europe and the conditions conducive to the emigration of the Germans, English, Danes, Norwegians, Swedes, Scots and Welsh that came to make up a large part of the Utah Mormon community and the shared values and norms of Utah. The geographically focused, non-random process continues with the Tongans, Samoans, Guamanians, Fijians, and Tahitians that have more recently emigrated to Utah – what are the conditions that have led to acceptance of Mormonism in Polynesia, their emigration, and what effects will this new group have on Mormon culture? (*The Salt Lake Tribune*. 2000. ‘The Polynesians of Utah: Islanders' dreams meet cold reality in Utah’. June 12). The point is, all of these social

processes, although themselves extremely complex, are spatially anchored to real-world locations and distributions by relatively straightforward linkages to geographical factors.

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