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Long-run Causes of Comparative Development: An Interpretation of the Recent Evidence

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Long-run causes of comparative development: An interpretation of the recent evidence [1]

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What explains the extreme variations in development achievement, among LDCs, and between developing and developed countries? This paper present a schematic framework for the interpretation of some influential recent contributions to the study of the major long-run causes of comparative development. The major emphasis is placed on what has been learned recently about the role of institutions in relation to other factors, through the use of centuries rather than decades of data.

First, in the very long run, few doubt that physical geography including climate had an important impact on economic history. *Geography* was once truly exogenous, even if human activity now has (often adverse) impact on geography. What is less clear is the role played by geography, such as tropical climate, today. Some research suggests that when other factors, notably institutions and inequality, are taken into account, physical geography adds little or nothing to our understanding of current development levels.[2] However, some evidence is mixed (for example there is evidence of an independent impact of malaria) and a direct link is argued by some economists.[3] This possible effect is reflected in the **Arrow 1** running from geography to *income and human development* on the left margin of Figure 2.12.

Institutions, which play a critical role in comparative development, are defined by Nobel Laureate Douglass North as the "rules of the game" of economic life. As such, institutions provide the underpinning of a market economy, by establishing the rules of property rights and contract enforcement, improving coordination,[4] restricting coercive, fraudulent and anti-competitive behavior - providing access to opportunities for the broad population - and constraining the power of elites and managing conflict more generally. Moreover, institutions include social insurance (which also serves to legitimize market competition), and the provision of predictable macroeconomic stability.[5] (The quality of many of these institutions are correlated, and it is disputed which ones matter most, though much of the early attention has gone to property rights protection.) Countries with higher incomes can afford better institutions, so it is challenging to identify the impact of institutions on income. But recently, development economists have made great strides in doing just that.

Most developing countries were once colonies (though not quite all, a fact that we will consider shortly). Geography affected the types of colonies established (**Arrow 2**), with one of the most carefully studied geographic features being settler mortality rates, whose impact[6] was examined in seminar work by Daron Acemoglu, Simon Johnson and James Robinson. When (potential) settlers faced higher mortality rates, they ruled at arm's length and avoided settlement. Their interest could be summarized as "steal fast and get out" or "get locals to steal for you." Therefore unfavorable institutions were established, favoring extraction over production incentives and perpetuating underdevelopment. But where mortality was low and populations were not dense, and exploitation of resources required substantial efforts by colonists, institutions broadly encouraging investments were established (sometimes as a result of agitation from settlers who had the bargaining power to demand better treatment). These effects are shown in **Arrow 3**. Acemoglu and coauthors also find that after accounting for institutional differences, geographic variables have little influence on incomes today.[7]

Any influence of geography on *pre-colonial institutions* is captured in **Arrow 4**. Pre-colonial institutions also mattered to the extent that they had influence on the *type of colonial regime* established. This possible effect is reflected in **Arrow 5**.

Pre-colonial comparative advantage in the Americas and its relation to the institutions established has been examined in the pioneering work of Stanley Engerman and Kenneth Sokoloff.[8] When climate was suitable for a *production structure* featuring plantation agriculture (particularly sugar cane in the early history) slavery and other mass exploitation of indigenous labor were introduced. In other areas, when indigenous peoples survived contact in sufficient numbers and mineral wealth was available, vast land grants that included claims to labor were established (by Spain). Although resulting from different comparative advantage (sugarcane and minerals), economic and political inequality was and remained high in all of these economies (even among freemen), which had long-lasting negative effects on development. These links are reflected in **Arrow 6** and **Arrow 7**. Early inequities were perpetuated with limits on the non-elite population's access to land, education, finance, property protection, and voting rights, as well as labor markets. This inhibited opportunities to take advantage of industrialization when they emerged in the 19th century – a period when broad participation in commercial activity had high social returns.

The contrast with North American *production structure* is striking. Its comparative advantage in grain lacked at the time the scale economies of tropical agriculture and of mineral extraction seen in elsewhere in the Americas. Labor scarcity with land abundance inhibited the concentration of power. The need to attract more settlers and encourage them to engage the colonial economy led to the evolution of more egalitarian institutions in the North American colonies. North Americans enjoyed greater egalitarianism in access to all of the factors so restricted elsewhere. This environment facilitated broad based innovation, entrepreneurship, and investment, and gave the US and Canada a decisive advantage despite their starting out as much poorer societies, which they used to economically surpass societies whose populations were mostly illiterate, disenfranchised, and lacking collateral.[9] (We will examine further aspects of their argument shortly.)

When local populations were larger and denser, and social organization was more advanced, it was easier to take over existing social structures to gain tribute. In such cases institutional arrangements tended to favor mechanisms of extraction of existing wealth over the creation of new wealth, often leading to declines in the relative fortunes of these regions. This is pointed up by Daron Acemoglu, Simon Johnson and James Robinson, whose influential research on this historical "reversal of fortune" [10] is also reflected in **Arrow 5**. Acemoglu, Johnson and Robinson stress that if geography were fundamental to development prospects, the most prosperous areas prior to colonization should continue to be relatively prosperous today. But the most prosperous formerly colonized areas today tend to have been least prosperous in the past. (Past population density and past urbanization, which is positively correlated with past income, is *negatively* correlated with current income, as these authors show. This applies globally, and it is not limited to particular regions; [Provisional on permission of MIT Press:] see figure 2.y and 2.z]. In addition to being an indictment of colonialism,[11] evidence of the reversal of fortune serves as an "indictment" of the geography hypothesis. There is evidence that Europeans set up more "extractive" institutions (that is, ones designed to extract more surplus from colonized populations) in prosperous areas, and, although somewhat controversial, that these institutions have often persisted to the contemporary period.[12]

A study of the impact of land revenue institutions established by the British Raj in India conducted by Abhijit Banerjee and Lakshmi Iyer show that historical differences in property rights institutions led to sustained differences in economic outcomes. The regions in which property rights to land were given to landlords have had significantly lower agricultural investments and productivity in the post-independence period than regions in which property rights were given to cultivators. The authors conclude that the divergence occurred because historical differences in institutions led to different policy choices. Tellingly, the regions in which landlords received the proprietary rights also had significantly lower investments in health and education in the post-colonial period.[13]

However, geography undoubtedly influenced early economic history in Europe.[14] This is reflected in **Arrow 8** leading to the box labeled *Evolution and Timing of European Development*. The early development in Europe gave it advantages over most other peoples, advantages which again were utilized to colonize much of the world. But the types of colonial regimes implemented varied considerably, depending on conditions prevailing at the time of colonization both in the different parts of the world colonized and within the colonizing country (colonial power) itself. The timing of European development impacted the types of colonial regime established, reflected in **Arrow 9**. For example it has been argued that for various reasons, on average earlier colonization involved more plunder and less active production than later colonization – although both occurred at the expense of the indigenous populations.[15]

Pre-colonial comparative advantage may have also interacted with the timing of European development in influencing institutions in that settlers in later colonized temperate zones arrived with more knowledge and more advanced technology. In particular, Europeans brought better agricultural techniques to the later settled areas such as North America. By the eighteenth century population growth in Europe and technical change had produced a large supply of people with temperate zone agricultural skills in products such as wheat and dairy. They were able to gain higher incomes using these skills in temperate colonies and former colonies (the so-called neo-Europes).[16] This can also be read as a role of geography but only in an indirect way. Thus, pre-colonial comparative advantage again mattered. This link is reflected in the flow through **Arrow 6** and **Arrow 7**. The role played by specific skills additionally points up the importance of human capital investments for development, reflected in Arrow 14.

Thus, the types of colonial regimes established, while always designed for the benefit of the colonizers, were influenced by local and European supply and demand factors. The type of regime had enormous influence on post-colonial institutional quality, reflected in **Arrow 10**. For example, the depraved rule of Belgian King Leopold II over Congo arguably was an ultimate cause of the oppressive Mobutu reign after independence. Of course, not all influences of colonialism were necessarily bad. Along with enslavement, subjugation, exploitation, loss of cultural heritage, and repression, colonists also brought modern scientific methods in fields such as medicine and agriculture. Note that this can be no apologia for colonialism, because these advances could have been gained without the societies becoming colonized, as seen for instance by the history of Japan. Still, there is some evidence that countries and territories with longer time periods spent as colonies (at least in the case of islands) have higher incomes than those with shorter colonial periods, with this effect greater for entities colonized later (perhaps because earlier European colonial activity had more pernicious effects on average than later ones).[17]

Besides creating specific institutions, European colonization created or reinforced differing degrees of *inequality* (often correlated with ethnicity), ultimately leading to diminished prospects for growth and development notably in Latin America and the Caribbean. This is reflected in **Arrow 11**. High inequality often emerged as a result of slavery in regions where crops could be "efficiently" produced on slave plantations. They also emerged where a large, settled indigenous population could be coerced into labor. Such histories had long term consequences particularly in Latin America. As Engerman and Sokoloff have argued in their historical research, the degree of inequality itself can then shape the evolution of institutions as well as specific policies. Where inequality was extreme, there was less investment in human capital (**Arrow 13**) and other public goods (**Arrow 16**), and as reflected in the bi-directional **Arrow 12**, possibly less movement towards democratic institutions (that could also have facilitated movement to other constructive institutions).[18]

Thus, extreme inequality may also be a long term factor in explaining comparative development. This is raised in the striking historical contrast between the states of North America and the states of Central and South America. There was greater egalitarianism in North America – though the inhuman treatment of Native Americans and of slaves in the southern colonies reflects the fact that this is not because the English were inherently "nicer masters" than the Spanish. Still, the North American experience contrasts strongly with the extreme inequality of Central and South America and the Caribbean.[19] Engerman and Sokoloff[20] argued that high inequality in Latin America led to low human capital investments, again in contrast to North America; this mechanism is again reflected in **Arrow 13**. Elites in Latin America then loosened their control only when their returns to increased immigration, and thus to creating more attractive conditions for immigrants, were high. Besides creating specific institutions, then, European colonization created or reinforced different degrees of inequality, often correlated with ethnicity. This history had long term consequences particularly in Latin America.

Cultural factors may also matter in influencing the degree of emphasis on education, post-colonial institutional quality, and the effectiveness of civil society, though the precise roles of culture are not clearly established in relation to the economic factors surveyed in this section and so are not included in the diagram for simplicity. In addition, institutional quality affects the amount and quality of investments in education and health, via the mediating impact of inequality. In countries with higher levels of education, institutions tend to be more democratic, with more constraints on elites. The causality between education and institutions could run in either direction, or both could be caused jointly by still other factors. Edward Glaeser, Rafael LaPorta, Florencio Lopez de Silanes and Andrei Shleifer argue that some countries with bad institutions run by dictators have implemented good policies including educational investments, and subsequently, after reaping the benefits in terms of growth, those countries have changed their institutions. They argue that human capital is at least as fundamental a source of long run development as institutions. [21] In the diagram, this would suggest adding an arrow from human capital back to post-colonial institutional quality; this is intuitively plausible, although additional evidence for this link will be needed for it to become more fully established.[22]

For the relatively small number of developing countries never colonized, such as Thailand, *type of colonial regime* can be reinterpreted in the diagram as institutional quality at an early stage of development (or as cultural influences not shown) – but note that the evidence for causality patterns is not as convincing in these cases. However, the diversity of development experiences of never colonized countries caution us not to place complete emphasis on the choices of colonizers; pre-existing social capital is also very important.[23] Never-colonized countries also show a dramatic range in performance; Ethiopia and Afghanistan remain very poor, Turkey and Thailand are in the upper-middle range, and Japan is among the very wealthiest countries; China, starting among the poorest countries thirty years ago, is now rapidly ascending the income tables. Of course, the quality of institutions mattered in non-colonized societies; it is just harder to conclude that institutions caused income rather than vice versa.

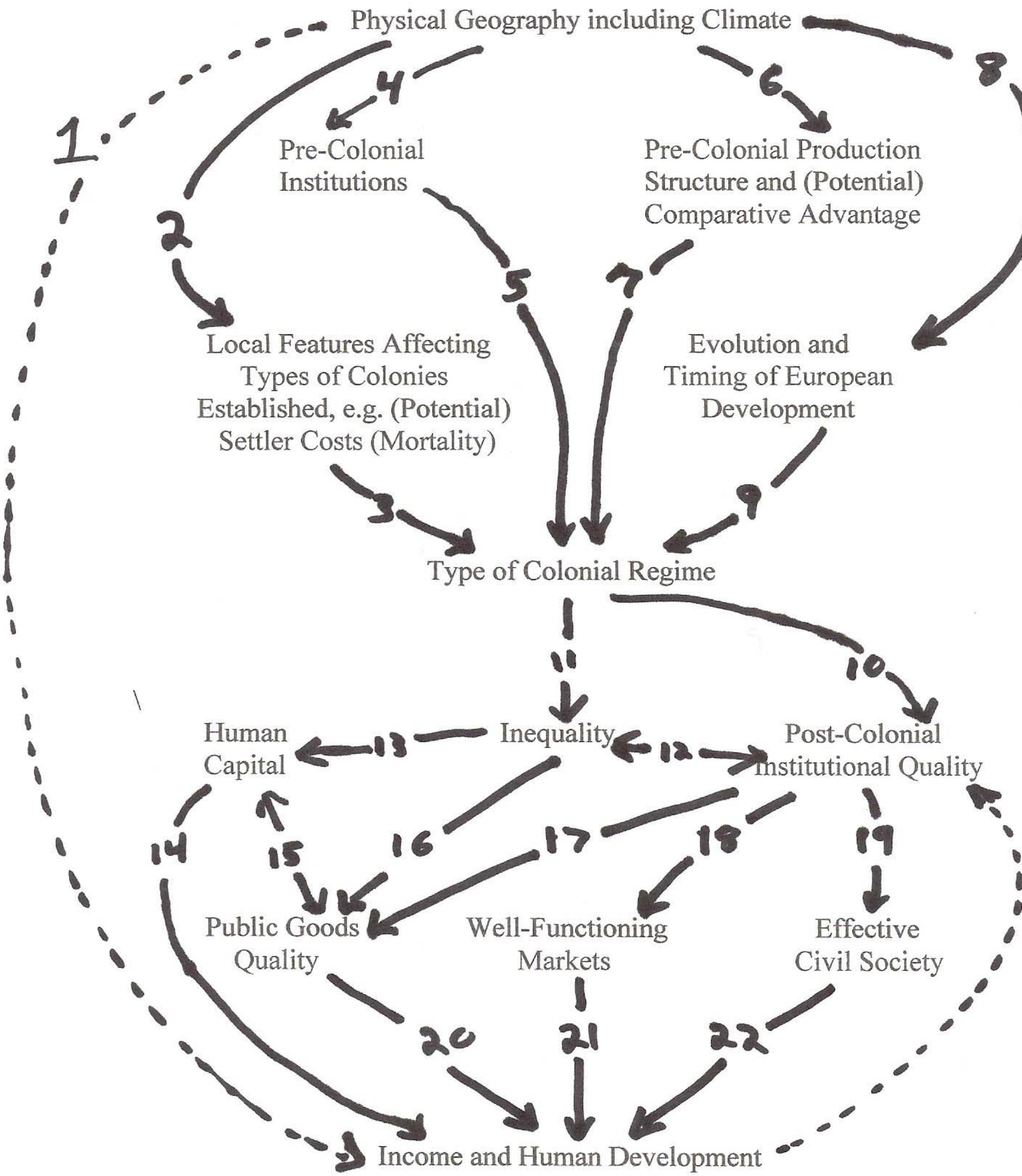
Clearly, human capital has a direct impact on income and on human development more broadly, as reflected in **Arrow 14**. The depth and breadth of education in the population will help determine the effectiveness of government as a force for development, reflected in **Arrow 15**. This is due not only to a better qualified civil service but also to the understanding of citizens of poor government performance and the knowledge of how to work for a better outcome and capacity to organize.[24] Of course, education could also independently affect the organization and functioning of markets per se (arrow omitted), but the literature to date has primarily viewed the productive impact of human capital on market outcomes as a direct one, reflected in **Arrow 14**.

The type and quality of global integration (particularly trade) has been stressed as a boon to long run growth and development in many World Bank reports. Trade may be beneficial[25] in that it provides various kinds of access to technology. And some economists argue that greater openness to trade beneficially affects the subsequent evolution of institutions. On the other hand, critics argue that the wrong kind of integration, or the failure to complement integration with appropriate policies, could be harmful to development. In fact, evidence suggests that once institutions are accounted for, trade itself explains very little; so integration is left out of the diagram for simplicity.[26] Not surprisingly, effects are complex. Geography can influence the pattern and amount of trade. And as countries develop and incomes rise, countries trade in greater amounts and in a wider range of goods.

Post-colonial institutional quality has a strong impact on the effectiveness of the private, public and citizen (or civil society) sectors. Democratic governance, rule of law and constraints on elites will encourage more and better quality public goods, reflected in **Arrow 17**. Better property rights protections and contract enforcement for ordinary citizens and broad access to economic opportunities will spur private investments, reflected in **Arrow 18**. And institutions will affect the ability of civil society to organize and act effectively as a force independent of state and market, as reflected in **Arrow 19**. Clearly, the activities of the three sectors will each have an influence on productivity and incomes, and on human development more generally, as reflected in **Arrows 20, 21, and 22**, respectively.[27]

It is not yet entirely clear which economic institutions are most important in facilitating development, or the degree to which strength in one institution can substitute for weakness in another.[28] But a key finding of recent research is that forces which protect narrow elites in ways that limit access of the broader population to opportunities for advancement are very major obstacles to successful economic development. If institutions are highly resistant to attempts at reform, this helps to clarify why achieving development is so challenging. But in most countries with poor institutions, there is much that can be done to improve human welfare, and to encourage the development of better institutions. Indeed, economic institutions do change over time, even though political institutions such as voting rules sometimes change without altering the real distribution of power or without leading to genuine reform of economic institutions. Although the evidence of the impact of democracy on growth in the short to medium term is not strong,[29] in the long run democratic governance and genuine development do go hand in hand; and the steady spread of more genuinely democratic institutions in the developing world[30] is a very encouraging sign. As Dani Rodrik has noted, “participatory and decentralized political systems are the most effective ones we have for processing and aggregating local knowledge. We can think of democracy as a meta-institution for building other good institutions.”[31] In addition, we will see that development strategies that lead to greater human capital, improved access to new technologies, better quality public goods, improved market functioning, addressing deep rooted problems of poverty, and facilitation of a vibrant civil society, will all help achieve development.

Figure 2.12: Schematic Representation of Leading Theories of Comparative Development



Bibliography

Note to editor: Recreate bibliog by adding each distinct reference from the endnotes below, alphabetized by first author.

Endnotes.

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[1] I would like to thank Daron Acemoglu and Stanley Engerman for their helpful comments on this section. Not all of the causal links described in this section are supported by the same type of evidence. Some are underpinned by widely (if not universally) accepted statistical (econometric) evidence. Other causal links emerge from historical studies. (The statistical analyses apply most convincingly to former colonies, because of the "natural experiment" in which features such as good or bad institutions, as stressed by Daron Acemoglu, Simon Johnson and James Robinson, were imposed largely exogenously by the colonial power.) All links discussed are argued in the development economics literature to be underlying factors leading to divergent development outcomes. The discussion follows the numbering of the arrows in Figure 2.11, which is arranged for concise display.

[2] For very readable introductions to this research see Acemoglu, Johnson, and Robinson, "Understanding Prosperity and Poverty: Geography, Institutions, and the Reversal of Fortune," in *Understanding Poverty*, edited by Abhijit Banerjee, Roland Benabou, and Dilip Mookherjee (Oxford University Press, 2006), Chapter 2, pp. 19-36 and Stanley L. Engerman and Kenneth L. Sokoloff, "Colonialism, Inequality, and Long-Run Paths of Development," in *Understanding Poverty*," op cit, Chapter 3, pp. 37-62. See Acemoglu, Johnson and Robinson, "The Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review* 91, 5, Dec. 2001; and Kenneth L. Sokoloff and Stanley L. Engerman, "History Lessons: Institutions, Factor Endowments, and Paths of Development in the New World, *Journal of Economic Perspectives*, 14,3, 217-32, 2000. For an excellent review of the work of these sets of authors see Karla Hoff, "Paths of Institutional Development: A View from Economic History," *World Bank Research Observer*, 18, 2, 205-226 (2003). See also Dani Rodrik, Arvind Subramanian, and Francesco Trebbi, "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development," *Journal of Economic Growth*, vol. 9, no.2, June 2004; and Dani Rodrik and Arvind Subramanian "The Primacy of Institutions, and what this does and does not mean," *Finance and Development*, June 2003, 31-34: http://www.imf.org/external/pubs/ft/fandd/2003/06/pdf/rodrik.pdf

[3] On the role of geography see Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies*, 1997; John Luke Gallup, Jeffrey D. Sachs and Andrew D. Mellinger, "Geography and Economic Development," *Annual World Bank Conference on Development Economics, 1998*, Washington, D.C.: World Bank, 1999 pp.127-78; Jeffrey D. Sachs. "Institutions Don't Rule: Direct Effects of Geography on Per Capita Income," NBER Working Paper No. 9490, 2003; Jeffrey Sachs, "Institutions Matter, but Not for Everything," *Finance and Development*, June 2003, pp. 38-41, http://www.imf.org/external/pubs/ft/fandd/2003/06/pdf/sachs.pdf;
see also Douglas A. Hibbs and Ola Olsson, (2004), "Geography, Biogeography and Why Some Countries are Rich and Others Poor" , Proceedings of the National Academy of Sciences of the US (PNAS), pp. 3715-3740.

[4] See Todaro and Smith 2008, Chapter 4, for an analysis of problems of coordination failure and the importance of mechanisms to correct it.

[5] For accessible discussions see Douglass C. North, Institutions, Institutional Change and Economic Performance, NY: Cambridge University Press (1990); Justin Lin and Jeffrey Nugent, Institutions and Economic Development," Handbook of Economic Development, vol. 3A, Amsterdam: North Holland 1995; Dani Rodrik, "Institutions for High-Quality Growth: What they Are and How to Acquire Them," working paper, 1999; and Acemoglu, Johnson, and Robinson, "Understanding Prosperity and Poverty: Geography, Institutions, and the Reversal of Fortune," op. cit.

[6] As an instrument for the quality of institutions established. Geography can be considered exogenous at that stage, and colonized people have little influence on their colonial regime. A caveat is that statistically, a valid IV identifies a causal role of the variable it is used to predict, but the explanation may not have much to do with the IV per se. See Rodrik, Subramanian, and Trebbi, "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development."

[7]This is after the problem of simultaneity between income and institutions is controlled for by taking advantage of the exogeneity of initial settler mortality risk (other approaches using different data still find some role for geography; see below). See Daron Acemoglu, Simon Johnson, and James A. Robinson, "The Colonial Origins of Comparative Development: An Empirical Investigation," in American Economic Review 91, 5, pp. 1369-1401, Dec. 2001. The schema on page 1370 in their paper corresponds to links 3-10-18-21 or 3-10-19-22 in Figure 2.12 in this text. See also Daron Acemoglu, Simon Johnson, James Robinson and Yunyong Thaicharoen, "Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth," *Journal of Monetary Economics* 2003. For a summary see Daron Acemoglu, in *Finance and Development*, June 2003, pp. 27-30: http://www.imf.org/external/pubs/ft/fandd/2003/06/pdf/Acemoglu.pdf. Of course, the Spanish were in Latin America for a very long time; but they did make use of existing tribute systems where they were available.

[8] Kenneth L. Sokoloff and Stanley L. Engerman, "History Lessons: Institutions, Factor Endowments, and Paths of Development in the New World, *Journal of Economic Perspectives*, 14,3, 217-32, 2000; Stanley L. Engerman and Kenneth L. Sokoloff, "Colonialism, Inequality, and Long-Run Paths of Development," in *Understanding Poverty*," edited by Abhijit Banerjee, Roland Benabou, and Dilip Mookherjee (Oxford University Press, 2006), Chapter 3, pp. 37-62. Kenneth Sokoloff died an untimely death in May 2007. He will be greatly missed.

[9] Engerman and Sokoloff, ibid. On the role of labor scarcity in the development of institutions in North America see David Galenson, "The Settlement and Growth of the Colonies: Population, Laobr and Economic Development," in Stanley Engerman and

Robert Gallman, eds., *The Cambridge Economic History of the United States, Vol. 1*, New York: Cambridge Univ. Press, 1996.

[10] See Daron Acemoglu, Simon Johnson and James Robinson, "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution," *Quarterly Journal of Economics*, 2002. Although the reversal is now associated with this article, it was also a theme of the "dependency theory" literature (Todaro and Smith 2008, ch. 3). Note however that it reached a very different conclusion, supporting socialist institutions and autarky rather than property rights ones.

[11] In fact the Acemoglu-Johnson-Robinson theory could be said to turn Dependency theory on its head. The neo-Marxist Dependency theory (see Todaro and Smith 2008, Chapter 3) views development constraints as coming from foreign nationals, but in the Acemoglu et al theory the underlying development problem is the presence of extractive institutions, whether the extractors are nationals or foreigners, and the corrective is investment-encouraging institutions, whoever implements them. The preferred institutions include some that are clearly non-Marxist, such as broader respect for private property rights. The implication is that the key problem is not to get today's rich countries to change their current behavior towards developing countries as to achieve reforms in local institutions – although former colonists might reasonably be asked to pay for costs of changing over to better domestic institutions, assuming this change is possible.

[12] This evidence is presented in Acemoglu, Johnson and Robinson, "Reversal of Fortune," op cit. The evidence has been criticized by some economists on the grounds that measures of modern institutions actually show great variability rather than persistence and may follow rather than lead growth; see e.g. Edward L. Glaeser, Rafael LaPorta, Florencio Lopez de Silanes, and Andrei Shleifer, "Do Institutions Cause Growth?" *Journal of Economic Growth*, 2004, who argue that human capital is a more fundamental factor. But for a theoretical analysis of how change in specific political institutions is consistent with stability in economic institutions, see Acemoglu and Robinson, "De Facto Political Power and Institutional Persistence, *American Economic Review*, Vol. 96 No. 2, 326-330, 2006. For an empirical analysis providing evidence that education does not in fact lead to democracy within countries over time, see Daron Acemoglu, Simon Johnson, James A. Robinson, and Pierre Yared, "From Education to Democracy?" *American Economic Review*, Volume 95, Number 2, May 2005 , pp. 44-49(6). Other significant critiques are found in Pranab K. Bardhan, "Institutions Matter, but which Ones?" *Economics of Transition* 13 (3), pp. 499-532, 2005

[13] Abhijit Banerjee and Lakshmi Iyer History, "Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India," *American Economic Review*, Vol. 95, No. 4, September 2005

[14] The primary evidence for this is historical in nature. See David Landes, *The Wealth and Poverty of Nations*. *Why Some Are So Rich and Some So Poor*, Norton, 1998. For example, the fragmentation of a continent divided by mountains, sea lines, and rivers,

facilitated political competition that fueled institutional development. See also Jared Diamond, op cit.

[15] See David Fielding and Sebastian Torres, “Cows and Conquistadors: Cows and Conquistadors: A Comment on the Colonial Origins of Comparative Development, accessed at http://www.business.otago.ac.nz/econ/research/discussionpapers/DP_0504.pdf; and James Feyrer and Bruce Sacerdote, “Colonialism and Modern Income - Islands as Natural Experiments,” NBER Working Paper W12546, October 2006. Both build on the pioneering research of Acemoglu, Johnson and Robinson.

[16] David Fielding and Sebastian Torres, “Cows and Conquistadors: Cows and Conquistadors: A Comment on the Colonial Origins of Comparative Development.” The neo-Europes are primarily the US, Canada, Australia and New Zealand.

[17] See James Feyrer and Bruce Sacerdote, “Colonialism and Modern Income - Islands as Natural Experiments,” NBER Working Paper W12546, October 2006. The authors use wind direction and wind speed as instruments for length and type of colonial experience of islands. They identify a positive relationship between colonization length, and income and infant survival rates. They also use their evidence to argue that “time spent as a colony after 1700 is more beneficial to modern income than years before 1700, consistent with a change in the nature of colonial relationships over time.” Note however that some islands included in this research are still colonies such as overseas French departments with large European populations, and that in other independent former colonies with high incomes the original peoples were largely wiped out. Stanley Engerman pointed out that (in the later colonial period) Europeans were often responsible for ending slavery in Africa (communication with the authors).

[18] Engerman and Sokoloff, op cit. For supporting econometric evidence on the negative effects of inequality using an identification strategy inspired by the Engerman and Sokoloff hypothesis, see William Easterly, “Inequality Does Cause Underdevelopment,” forthcoming, *Journal of Development Economics*, 2007. See also William Easterly and Ross Levine, "Tropics, Germs, and Crops: The Role of Endowments in Economic Development," *Journal of Monetary Economics*, 50, 1, January 2003. For a different argument see Edward L. Glaeser, Giacomo Ponzetto and Andrei Shleifer, “Why Does Democracy Need Education?” NBER Working Paper No. 12128, March 2006; however see Daron Acemoglu, Simon Johnson, James A. Robinson, and Pierre Yared, "From Education to Democracy?" *American Economic Review*, Volume 95, Number 2, May 2005 , pp. 44-49(6). For alternative perspectives see Daron Acemoglu and James Robinson, *Economic Origins of Dictatorship and Democracy*, New York: Cambridge Univ. Press, 2006. It remains unclear whether economic or political inequality is more fundamental, as politicians often amass wealth when their power is secure. For an interesting recent study suggesting the latter is important see Daron Acemoglu, Maria Angelica Bautista, Pablo Querubin and James A. Robinson, “Economic and Political Inequality in Development: The Case of Cundinamarca, Colombia,” June 2007: http://econ-www.mit.edu/faculty/download_pdf.php?id=1510

[19] Although in this decade inequality is rising in North America and falling somewhat in some Latin American countries, the contrast remains extreme.

[20] Engerman and Sokoloff, op cit. See also Edward Glaeser, "Inequality," in Barry R. Weingast and Donald Wittman, eds., Oxford Handbook of Political Economy, Oxford University Press, 624-641, 2006

[21] Glaeser et al, "Do Institutions Cause Growth?" *op. cit.*

[22] An important analysis is presented in Daron Acemoglu, Simon Johnson, James A. Robinson, and Pierre Yared, "From Education to Democracy?" *American Economic Review*, Vol. 95, Num. 2, May 2005, (6); see esp. pp. 47-48. The intuitive idea that migrants to the "neo-Europes" (esp. the US, Canada, Australia, and New Zealand) settled by Britain embodied not just better institutions but also higher human capital levels also needs further evidence. See also Acemoglu et al, "The Colonial Origins of Comparative Development: An Empirical Investigation," ibid.; where the effects of institutions as discussed earlier held even when excluding these "neo-European" countries.

[23] See e.g. Pranab K. Bardhan, "Institutions Matter, but which Ones?" *Economics of Transition* 13 (3), pp. 499-532, 2005. This article also offers some interesting criticisms of the empirical methods of the Acemoglu et al papers.

[24] Glaeser et al., op cit.
[25] See Jeffrey Frankel and David Romer, "Does Trade Cause Growth?" *American Economic Review*, 89, 3, 379-399, 1999.
[26] See Rodrik, Subramanian, and Trebbi, "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development." They provide a diagram of the effects outlined in this paragraph in their Figure 1.
[27] Of course, the effectiveness of each sector may also impact the effectiveness of the other sectors. This is not shown in the diagram.
[28] Pranab K. Bardhan, "Institutions Matter, but which Ones?," op cit.; Dani Rodrik, "Getting Institutions Right," 2004.
[29] See Todaro and Smith (2008, Chapter 11).
[30] See e.g. UNDP Human Development Report 2005.
[31] Dani Rodrik, "Institutions for High-Quality Growth: What they Are and How to Acquire Them," working paper, 1999.