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Causes and Consequences of Second Language Education: A Global Analysis From 1980 to the Present

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Causes and Consequences of Second Language Education:
A Global Analysis From 1980 to the Present

A Dissertation submitted in partial satisfaction
of the requirements of the degree of

Doctor of Philosophy

in

Sociology

by

Gary Coyne

August 2013

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DEDICATION

To my parents, for all that they have given.

ABSTRACT OF THE DISSERTATION

Causes and Consequences of Second Language Education:
A Global Analysis from 1980 to the Present

by

Gary Coyne

Doctor of Philosophy, Graduate Program in Sociology
University of California, Riverside, August 2013
Dr. Christopher Chase-Dunn, Chairperson

This dissertation examines the causes and consequences of second language education policies at the global level and in a national comparative framework, largely with quantitative data and pooled time series analyses.

Languages were selected into school curricula largely because of the way the European world-system expanded over the past few hundred years, with colonization and the spread of the nation-state model among the most important factors. Countries that make studying second languages obligatory, by making attendance mandatory in the grades where second languages are taught, tend to be younger and use more widely spoken languages; the effects of IGO memberships is fragile indicating that the isomorphic processes associated with the world polity should not be overemphasized.

The consequences of second language policies are first examined in terms of stratification and empirical analyses, with a sample of African countries from 1980 to 2000 show that where colonial languages are used as the medium of instruction

inequality (measured as Gini coefficient for household income) is significantly higher, net of robust cross-national predictors. The amount of time devoted to the study of these languages as subjects, however, has no impact on inequality. Consequences are also examined in terms of economic development (measured as GDP per capita), specifically in so far as second language skills can be understood as human capital that facilitates economic development through the diffusion of technology and promotion of trade. Empirical analyses with a large group of non–English-speaking countries show a positive relationship between time spent on English and GDP per capita for the period 1980 to 2005.

The larger picture that emerges is the causes and consequences of second language education policies at the national level are part of larger global level processes, like the expansion of the European world-system, the spread of a global level culture and the dynamics of global economic networks.

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Chapter One:

Introduction and Major Questions

About one in five people on the planet is a student at some level (Benavot et al. 1991), so it is not surprising that the structure, content, and outcome of schooling processes have received significant attention. This dissertation focuses on language education policies in the period from 1980 to 2000, but understands them as strongly informed by the historic expansion of the European world-system from 1500. In this analytic framework cross-national variations in language education policies are used as a lens to focus on specific facets of the global social order. After Chapter Two sets the historical context, Chapter Three addresses the role language education plays in within country inequality in Africa. Chapter Four takes the implementation of second language education policies as a marker of national level incorporation into a global level culture. Chapter Five understands language skills as human capital and links them to national economic development. The final chapter focuses on English language education in particular, but the extent to which this language dominates at the global level is evident in other chapters. Two broad questions motivate the inquiries here and this short chapter introduces those questions and the substance of each of the four major chapters that follow.

What Are the Causes of Language Education Policies?

First, I am interested in why countries teach the languages they do. To this end, Chapter Two draws observations from historical works and case studies of individual

countries to shed light on this. The factors that emerge as most important can be traced to the expansion of the interstate system. In particular, nationalism meant the selection of certain languages to represent the culture of the assembled population and, from a more practical angle, use by national bureaucracies. In most places—much of Europe, the Americas, and Asia—these two needs could be meet by one language, and this became the first language of schools. In other places, Africa in particular, European languages were introduced by colonization during the 19th century, but high levels of indigenous linguistic diversity prevented the selection of any one of them as the single national language. In these cases, the languages of colonizers were retained as official languages and taught to all in school. They are usually second languages but even where they are first languages large sections of the population (half or more) do not speak them at home.

Chapter Four addresses why countries do or do not structure their curricula in such a way that students actually have to study the second language selected. There has been a marked convergence in structure and content of schooling (Benavot 2004; McEneaney and Meyer 2000), and all states examined here[1] included both a first and second language, but in some places the number of mandatory years of schooling can be completed before the student reaches the higher grades where second languages are taught. The assumption is that meeting global norms—such as including a second language and mandating attendance—bestows legitimacy on a school system (Coburn 2004) but that teaching a second language to large numbers of students requires

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[1] Even isolated states such as North Korea or "failed states" such as Somalia at least claim to be teaching a second language. The only exception I found was Libya in the mid-1980s. The country teaches English, and the language was removed for a time because of very poor relations with the United States.

substantial outlays of resources and entails significant logistical demands. School systems manage such tensions through loose coupling, which shields the technical core of their activities- putting students in classrooms with adequately trained teachers- from the formal structure of the organization (Eckel 2008; Meyer et al. 1977). In Chapter Four I use a large sample of countries and pooled time series techniques to identify variables that predict whether or not it is mandatory to study a second language.

What Are the Consequences of Language Education Policies?

In Chapter Three I start with the assumption that schools play a role in the stratification of individuals and groups (Rubinson and Browne 2008). While some have looked at stratification in relation to how language is used in schools or how people from different groups use the same language in subtly different ways (Berstein 1977; Bourdieu 1991; Calarco 2011; Lareau and Hovart 1999; Lareau and Weininger 2003; Spolsky 2008), there may be situations in which access to different languages through schooling is related to inequality within societies. The place of colonial languages in former African colonies seems to be such a situation. Colonial languages often dominate government and higher education (Crystal 2003; Mazrui and Mazrui 1998), making them both a marker of elite status and a skill that may lead to higher incomes or greater access to education and other government services. African nations generally have a high degree of linguistic diversity; few people speak colonial languages in the home so most must rely on formal education to learn them. In Chapter Three I use pooled time series methods to empirically

test the proposition that access to colonial languages through formal schooling plays a role in inequality in African states.

In Chapter Five, by contrast, I start with the view that schools create human capital, or skills embodied in individual workers that increase their capacity to do productive work (Becker 1975). Formal education is generally seen as the most important creator of human capital and there is agreement on, and empirical support for, the idea that education facilitates economic growth through the formation of human capital (Barro 1991; Barro and Lee 1993; Rubinson and Fuller 1992). Foreign language skills seem to fit the definition of human capital in that they are embodied in people, are created through the allocation of time or resources and are productive in the labor market (Chiswick and Miller 1995). Indeed, there is evidence that foreign language skills facilitate growth through the diffusion of technology (Guellec and de la Porreri 2001; Keller 2001; Nelson and Phelps 1966; Romer 1990; Romer 1998) and the promotion of trade (Boisso and Ferrantino 1997; Foroutan and Pritchett 1993; Frankel 1997; Guo 2007; Havrylyshyn and Pritchett 1991; Melitz 2007; Rauch 1997). This is taken up in Chapter Five, with a focus on English because it may be particularly effective at facilitating the diffusion of technology and promoting trade. I use pooled time series techniques to test the relationship between emphasis on English as a second language and per capita GDP.

Data Sources

I place language education in a long historical perspective and am interested in understanding these policies and practices in their own terms. However, I also use

variations in language education policies as a window on other processes in the modern period. I am able to accomplish this because of rich and detailed data on language education I extracted and coded from the International Bureau of Educations' (IBE) archives, both online and in Geneva Switzerland. Coding focused on curricular timetables as seen in Figure 1.1. My coding scheme includes a nominal variable for what languages are taught and interval and ratio variables to measure the relative emphasis given to these subjects. (I discuss the sources, coding procedures and other aspects of the data gathering process in the Appendix.)

Of primary interests is determining what languages[2] are taught as first and second languages. If the first language of a national school system is the language that takes up the most time in the curricula, the second language is simply the language that takes up the second most time. These measurement categories have substantive meaning in that the first language is (with few exceptions) the official language of the state that operates that school system while the second language is generally one of just a few languages—such as English, French or Russian—that are studied in a number of countries as second languages. (As we will see, there are interesting cases where the second language is *also* an official language.) From these documents it is also possible to create measure of emphasis. I do this in different ways in different investigations, but I either simply count the number of years the language must be studied or determine the percent of teaching periods devoted to a particular language.

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[2] Every language of substantive interest here is clearly a specific case of a more general phenomenon, which will be taken as a given. I do not wish to dwell on what languages are in any linguistic, logical, or cognitive sense.

Knowing what languages are taught and with what level of emphasis allows me to parse the curricula and address sociological interesting questions related to education. I use this data to investigate how the contents and structure of curricula is related to the reproduction of inequality, national integration in global structures and the accumulation of human capital. At the same time, gathering observations across time allows me to use data analysis techniques that can account for the passage of time and control for differences between countries.

Figure 1.1: Example of curricular timetable for Malawi, 1995

Subject	Number of weekly periods in each standard							
	I	II	III	IV	V	VI	VII	VIII
Chichewa language	9	9	8	8	5	5	5	5
Creative arts	2	2	2	2	4	4	4	4
English language	5	5	7	7	8	8	8	8
General studies	4	4	4	4	–	–	–	–
Mathematics	6	6	7	7	7	7	7	7
Music	1	1	1	1	2	2	2	2
Physical education	1	1	2	2	2	2	2	2
Religious education	2	2	2	2	2	2	2	2
Social studies	–	–	–	–	5	5	5	5
Agriculture	–	–	–	–	5	5	5	5
Home economics	–	–	–	–	4	4	4	4
Needle craft	–	–	–	2	2	4	4	4
Science/health	–	–	–	–	5	5	5	5

Source: Kunje & Chimombo, 1999. The average duration of teaching periods is 30 minutes in Std. I and II and 35 minutes in Std. III–VIII.

Chapter Two:

Causes of Contemporary Language Education Policy:
Historical Evidence from a Global Perspective

ABSTRACT

This chapter surveys contemporary first and second language policies and examines the historical reasons languages are taught in particular countries. Differences in power between societies- particularly in so far as colonization lead to movement of populations out of Europe and the colonial partition of Africa and of parts Asia- stand out as the most important factor. The expansion of the European world-system entailed the spread of the interstate system and nationalism which has also shaped what languages are studied. In a plurality of countries (41%) the first language is unique to that country, in line with the logic of nationalism. There are many fewer languages taught as second languages, either English, French, or Russian is the only language taught in 60% of countries.

INTRODUCTION

There are currently about 6,000 distinct human languages (Nettle 1999) but only 250 or so[3] are included in the curricula of national school systems. These languages were clearly not chosen at random and it was more powerful groups that were able to institutionalization their languages this way.

In the first place, it is meaningful to talk about languages in this way only because of the existence of mass school systems with standardized curricula. These institutions originated in Europe during the Enlightenment, where increasingly secular and rational worldviews challenged existing understandings of education. From the mid-1700, leading nation-states began merging a number of distinct educational traditions into coherent national institutions. This was emulated by other states and used as a means to create a more productive workforce and a more loyal citizenry. School systems were also spread by colonization, but upon gaining independence and taking control of these systems new states did not dramatically restructure them (Boli, Ramirez and Meyer 1985; Ramirez and Boli 1987). As part of the process, certain bodies of knowledge were selected into the standardized curricula (Benavot 2004; Meyer 2006) and as of 2005, all school systems teach two different languages as distinct curricular subjects.

The spread of the mass school systems is part of European colonization, which is itself part of a larger set of inequalities between societies and the expansion of the

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[3] This is my estimate from the data I have gathered: 127 countries include 67 distinct languages; three of the two dozen countries that allow for multiple first languages add about 20 each, one adds 15 and the rest of in this category add 5 or less. This makes 242 languages in 149 countries. The dozen or so countries excluded would add a few more languages, but most of the languages they teach likely to have already been counted.

European world-system. The movement of European populations into the New World and Antipodes is why just a few European languages are taught as first languages in these several countries. The expansion of the European world-system also meant the spread of the interstate system and nationalism, which suggested each state chose a language to represented the assembled population and first languages are invariable national languages. Second languages, particularly in Africa and Asia, are often those of colonizers. This chapter provides historical material that illustrates the importance of these factors.

Figure 2.1: Languages Taught as First Languages in 2005 (n = 149)
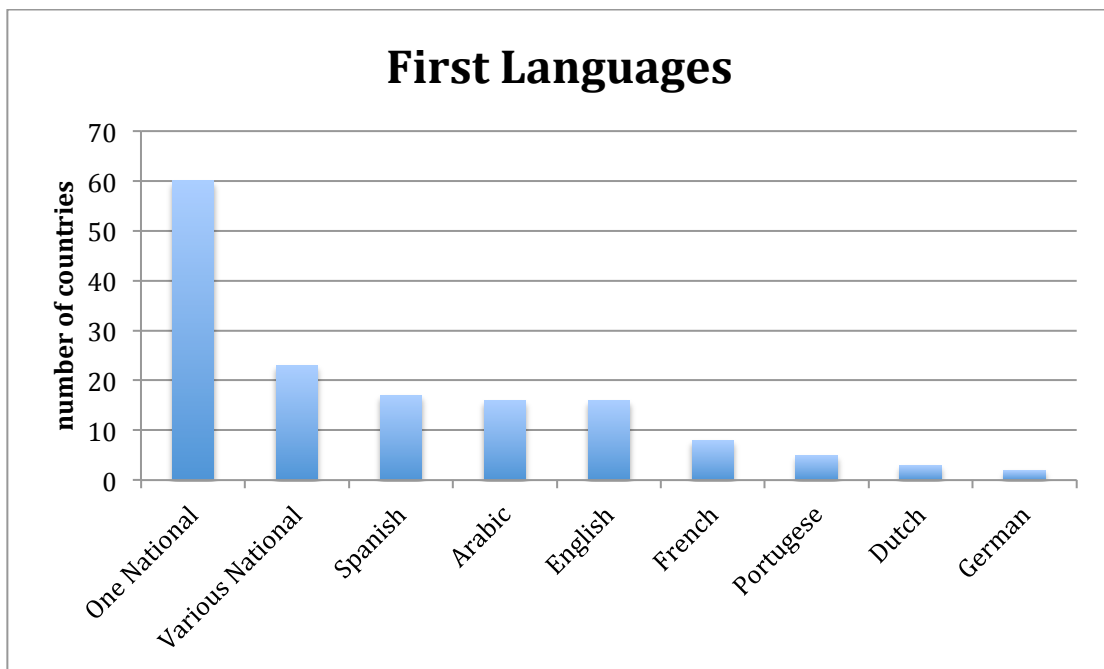
FIRST LANGUAGES

Figure 2.1 shows languages and the number of countries that teach them as a first language in 2005. The category "one national" aggregates all first languages that are taught only in one country. These 60 countries teach 60 different languages and connections between language and county—or nation and state—are very clear in most cases: Thai is the first language of Thailand, Nepali of Nepal, Japanese of Japan, French of France, and so on. The logic of the interstate system suggests that each nation-state should contain one, culturally and linguistically, homogenous population (Smith 2001). This may have happened in ways that were centrally planned, as when the French state mandated that the centralized school system built after the Revolution not use regional dialects (Walter 1993). Or it may have been unplanned, as in the mid-17th century when regional variants of English began to emulate the version found in capital (Crystal 2003). In either case, however, the linguistic homogeneity of these populations was caused to some degree by state formation and it would be a mistake to think that everyone in Thailand speak Thai or that everyone in Nepal speaks Nepali. Both of these states have over 50 indigenous languages and virtually every state has some degree of linguistic diversity. The language selected as a national language receives high levels of institutional support and marginalizes other languages within the same territory (Anderson 1983). The seemingly simple link between nation and state, then, often misses those groups whose languages receive little recognition in national institutions and are marginalized within their own state.

The category "various languages" represents about 15% of countries and a fundamentally different kind of language policy. No single language is taught as a first language and various languages are used in different subnational regions. In most of these states just a few languages are taught; in others (like India, Nigeria, and the Democratic Republic of the Congo) as many as 20 may be used. It is difficult to determine exactly how many different first languages are used by these 23 countries, but they account for more than half of all languages used by schools. Many of these states are in Africa and Asia have high linguistic diversity because the ecology of tropical regions can generally support many more or less autonomous groups and this has lead to a large number of languages.[4] With the arrival of the nationalism states in these areas often adopted federated structures, like India and Nigeria. There is also a group of nations- like Canada and Belgium- that have adopted federal structures not because linguistic diversity is particularly high but because populations are split into just two or three linguistically based groups. This group also contains a number of countries whose national territory is split across several islands. This represents a fundamentally different kind of relation between state and society than the nation-state ideal and, indeed, these countries the state is weaker in terms of state spending as a percent of GDP (Coyne 2012).

Incorporation of the New World

The large discrepancies in wealth and power between societies in the New World and core of the expanding European world system meant that the Americas were

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[4] In contrast, the ecology of temperate regions dictates distinct periods of surplus and scarcity of food and this variation can be eased by coordination.

incorporated into the European centered world system as peripheral areas. It was the decimation of indigenous populations through disease that was to have the most profound linguistic impacts: the 2,000 to 3,000 indigenous languages are not taught in any schools in the region because there are no speakers left. For most intents and purposes it is just four European languages- English, Spanish, Portuguese and French- that are taught in schools here. This same set of languages is among the most common (sometimes only) second languages in every state in the region as well.

Spanish became the dominant language in most of South and Central America as a result of Spanish colonization from the 15th century both because of movements of populations from Spain but also because Spanish men married native women, producing Spanish-speaking families and increasing the Spanish-speaking population. Independence movements were largely led by men from these mixed families and once in power the revolutionaries tended to imitate the European elites who had controlled colonial governments. Spanish was retained as the language of state and schooling in seventeen[5] countries, although Bolivia uses Guarani as a first language and Spanish as a second in many schools. (Burkholder and Johnson 1990; Fieldhouse 1982). That said, it is important to remember that there was indigenous resistance and the time scale of replacement of indigenous languages is hundreds of years; even as late as 1800 Spanish speakers may have been outnumbered by as much as three to one (Lodares 2007).

Portuguese is taught as a first language in Brazil for similar, although not identical, reasons. Plantation slavery became more important in Brazil than in Spanish

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[5] These countries are: Argentina, Bolivia, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Peru, Uruguay and Venezuela.

colonies, and the forced population movements added to the number of Portuguese speakers. Brazilian independence entailed little direct conflict with Portugal and the status of Portuguese was never seriously questioned. Significant population increases as Brazil extended control into the interior means that Brazil is now, by far, the largest Portuguese speaking country (Burkholder and Johnson 1990).

English is also taught as a first language in North America and parts of the Caribbean because of formal colonization and the movement of settlers, although the dynamics here are somewhat different. First, in no British colony did Protestant missionaries affect large-scale organization of indigenous populations in ways that protected their languages, although they did develop writing systems for several American languages (Ostler 2005). Second, slavery played a significant role in several colonial economies, and this ultimately contributed to the number of speakers of European languages. On the Caribbean islands slavery resulted in the emergence of several distinct English-based creoles. Eight school systems in the Caribbean teach British (or American) Standard English as first language because creoles are usually spoken on just one island and this limits their communicative potential while Standard English is usually easy to learn for those who speak these creoles (Rubal-Lopez 1996). On the North American mainland large numbers of immigrants from other European countries who were largely assimilated into the English-speaking majority culture have created significant English-speaking populations. In the United States, English is used as a first language. While most Canadian schools also use English as a first language, French-speaking regions use French as a first language and English as second and both

languages have official standing. European languages are first languages in the New World because contact decimated indigenous populations and languages and subsequent population growth in, and movement of people to, these areas increased the number of speakers of these four languages.

European Languages in Africa

A number of countries in Africa use European languages as first languages, because of 19th century colonization. Differences in power between societies, again, allowed core powers to dominate societies outside Europe. European colonization, however, was much briefer here- some areas were under effective European control for as little as two or three decades- and was not focused on settlement (it was Europeans, in the main, who were susceptible to African disease) but the extraction of resources. Some administrative apparatus was needed and later (particularly after World War One) calls for investment in social infrastructure from both Africans and Europeans increased. The result was the construction of state structures and schools (among other institutions) along European lines using European languages. When colonies gained independence legal codes, foreign offices, schools, and other parts of the state functioned in the language of their colonizer, creating considerable institutional inertia. At the same time, most of these societies had (and continue to have) very high levels of linguistic diversity making it difficult to select one indigenous language to take on all official functions because most of the widely spoken languages have connections to regional, cultural, or religious groups (Kachru 1984; Laitin 1992; Mazrui and Mazrui 1998).

Seven countries,[6] mostly in West Africa, use French as a first language. The French had some presence in the region from 17th century, but effective control dates to mid-19th century. Missionaries often set up schools teaching French before areas were officially annexed. French missionaries were Catholic and this embedded them in an organization less tolerant of local variations in practice and that used Latin for some purposes, both of which slowed the spread of French (Manning 1998; Quinn 2000). From about 1900 the colonial state began to standardize education and by the time a single school system encompassing French West Africa was in place in 1918 about one in five primary-aged children was enrolled (Benavot and Riddle 1988). French colonial administrators, however, tended to conflate teaching French with education in general and this meant more academic and less vocational education that might draw more pragmatically minded families and their children into the education system (Craig 1981; Kelly 1991; Quinn 2000). These colonies never saw significant French settlement and the use of French as a first language is because these states made little change in the school systems they inherited at independence (which was generally peaceful). The wisdom of this policy—which means virtually all students are taught in a language they are unfamiliar with—is certainly open to question as six of the ten least literate countries are in this group of former French colonies (UNESCO 2006).

There are only two African states—Sierra Leon and The Gambia—that teach English as a first language. A significant British presence in West Africa was established in the attempt to enforce a ban on slavery from the first decades of the 19th century.

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[6] These countries are: Benin, Burkina Faso, Republic of the Congo, Guinea, Ivory Coast, Niger and Senegal.

Missionaries worked to convert indigenous populations and, significantly, slaves were repatriated to these areas and this added to the numbers of speakers of English-based creoles. This, and desire to differentiate themselves from surrounding Francophone states, is why English was selected as the medium of instruction (Gaily 1965).

Mozambique and Angola teach Portuguese as a first language, and this European language is more widely spoken—estimates range from about a quarter to half of the population in each country—than are colonial languages in other African states. These colonies were established around 1500, and until the mid-1700s Portuguese was a major *lingua franca* for trade around the Indian Ocean. There was also relatively vigorous missionary work over several hundred years, although on balance, Portugal built fewer schools than other European colonizers (Azevedo 1980; Birmingham 1999; Isaacman and Isaacman 1983). Longer periods of exposure seem to mean more speakers of Portuguese but its retention is, as with European languages in other African states, the result of high linguistic diversity frustrating the selection of any one as the national language. The use of European languages as second languages in Africa is because during the 19th century European countries were able to claim and administer these areas.

We will return to European languages in Africa again, but it is important to bear in mind that the differences between teaching a European language here as a first or second language is more a matter of degree than kind. In all of these cases is was the difference in power between European and African societies that allowed European actors to take and hold territory and resources in Africa. The administration of these areas introduced European languages and when colonies gained independence during the 20th

century the basic form and content of the administrative apparatus and school system generally changed little. At the same time, in the period since the end of formal colonization, core actors have promoted their languages through cultural exchange programs, conditions of education aid and the provision of educational materials and language teachers free of cost to less developed nations (Phililipson 1992). This situation is possible because of differences in wealth between core and periphery – the former has sufficient resources provide such resources while the later typically lacks sufficient resources to meet all demands.

Arabic

The spread of Arabic is also tied to the expanding power of a group of Muslim polities from the 7th century, initially centered on the Arabian peninsula. Arabic is now used in sixteen countries[7] and it is important to remember that Muslim rulers often integrated nomadic populations and desert hinterlands into their polities before they became incipient nation-states. The mosques that sprang up throughout the region often included schools, generally one teacher holding classes for students of various ages on a covered veranda; there was no specific syllabus beyond a focus on Arabic (Hourani 1991). Islamic scholars led the world from the 8th to the 11th century, but with fragmentation of the Islamic world educational institutions began to stress rote memorization of sectorial doctrines and this carried over to language education where memorization of the Koran took precedence over true understanding of Arabic. These

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[7] These countries are: Algeria, Bahrain, Chad, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, the United Arab Emirates, and Yemen

religious schools were never knit together in a compressive way and even today still exist in many countries outside of national mass schooling systems (Hilgendorf 2003). At the same time, Arabic began to be used in other domains and merged with the Semitic languages spoken in the Middle East and Levant to form distinct varieties of spoken Arabic. Today, there are multiple forms of Arabic that align with nation-states and may not be mutually comprehensible. The common thread of Islam and the fact these spoken languages are linked in written form, though the written variety employed in the Koran, has meant differences tend to be downplayed. Most Arabic-speaking areas drew on their rich histories and Islamic culture with the rise of nationalism and the formation of national cultures (Bakalla 1984) and Arabic became an official language of these states and the first language of their schools.

Outside the Arab core of the Islamic world, Arabic is not generally part of the curriculum. While Muslim traders spread Islam down the West Coast of Africa, along the Central Asian trading routes and across the Indian Ocean merchants were generally more interested in the practical considerations of doing business, so conversion took a backseat. Even where Islam did win a large number of converts, if languages already in use were very different from Arabic the latter remained a language of prayer or trade and did not move into widespread everyday usage (Ostler 2005). In the formation of curricula, governments seem to show some reluctance to teach a language so closely linked to a particular religion (James 2008).

Figure 2.2: Languages Taught as Second Languages in 2005 (n = 149)
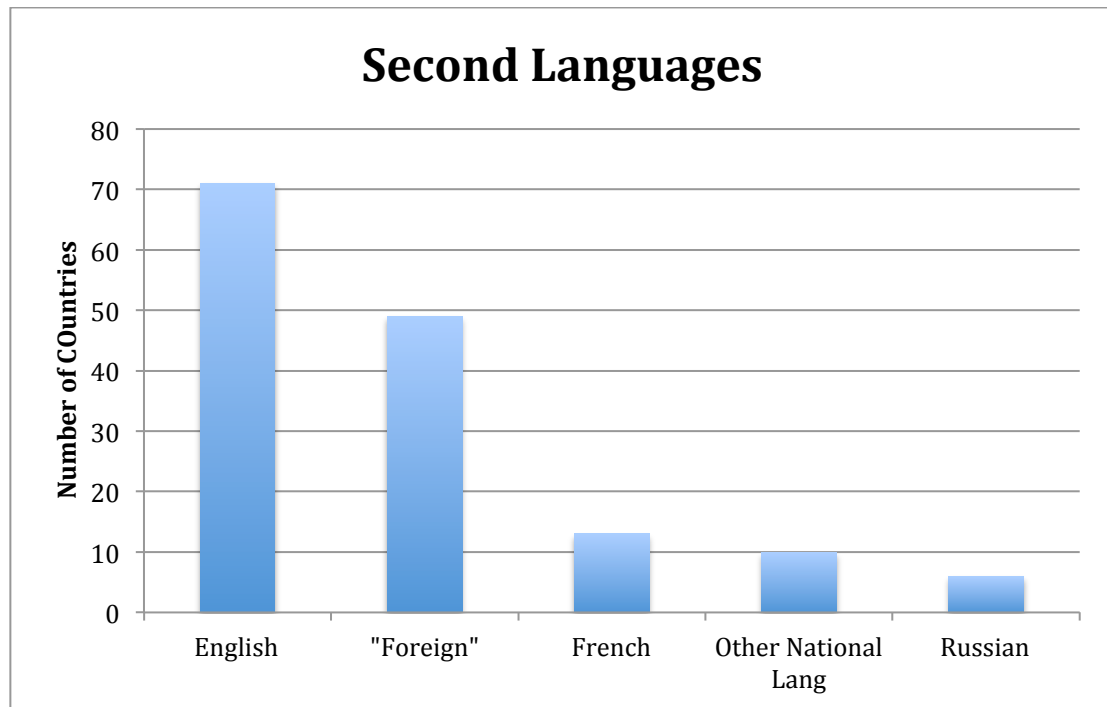
Second Languages

SECOND LANGUAGES

Within school curricula, second languages are general understood as providing access to culture and information beyond one's own (Benavot 2004; de Swaan 2001). That said, the most common reason for a particular language to be studied as a second language is its imposition by a former colonizer and the languages of the most prolific colonizers- namely English, French and Russian- are the most widely studied.

While we will examine each of these languages in turn, about 40% countries do not name one specific second language, providing some degree of choice. In some cases, students have a choice of which language to study at the school they attend. In other

cases, some schools offer one second language while others offer another; choices may be based on academic track, region, or allocation of trained personnel. In situations where there is not a standard second language education policy, national policy documents indicate that English, Spanish, French and Russian are prominent, but so are regionally important languages (such as Arabic, Chinese, Swahili, German or Hindi) and languages of neighboring countries are also common. While the category of "Foreign" includes a number of languages, it does not add substantially to the total number of languages taught because the set of choices is similar from country to country and most of these are already the first languages of at least one country. This kind of second language education policy seems to be gaining popularity, increasing from 14% of countries in 1980 to 32% in 2005. However, it appears that where countries move from teaching a specific language to such a policy, there is stability in what language(s) are actually studied because of student preferences and investment of resources in the materials and staff. For example, several of the states that emerged from the breakup of the Soviet Union were interested in moving away from teaching Russian, yet it took several years to locate enough teachers with sufficient training in other languages (Fodor and Peluau 2003).

In the other cases where there is not a single second language, another national language is studied as a second language. This occurs in states with a small number of major linguistic groups whose languages are institutionalized at the subnational level. For example, in the Flemish-speaking parts of Belgium, French is the second language, while in the French-speaking parts, Flemish is the second language.

English as a Second Language

English is the most commonly studied second language and successive periods of British and US hegemony are key to understanding this. British hegemony is a more important cause because formal colonization was seen as a relatively legitimate form of core domination over peripheral areas during the period of British hegemony and, thus, there are almost 40 countries former British colonies that teach English as a second language (in addition to the 16 that use English as a first language because of British colonization). The main contribution of the Unites States to the spread of English was being the global leader— thus making English an attractive choice as a second language—in the decades when most developing countries formalized curricula and expanded their education system (Crystal 2003). The wide distribution of English as a first and second language has created a significant number of English speakers, suggesting to any student or Minster of Education that studying or teaching English would best contribute to the ability to communicate with others (de Swaan 2001). Although dealt with more in Chapter Five, it can be pointed out here that the linkage between English and science and technology- which again makes it an attractive choice to study- originated in the economic innovation and leadership needed for the British and US to occupy the place of hegemon.

In many ways, India was the most important British colony, and the model of education worked out here was applied to other British colonies. British claims on India date from the 17th century, but education was left to missionaries until the 1830s. Once

the British East India Company and later the state became involved in education what developed was a decentralized primary education system largely consisting of missionary schools using indigenous languages but teaching English as a subject. The state was more involved in secondary education, which was largely in English and oriented toward training Indian men for lower posts in the colonial civil service. The civil services never employed any significant portion of the population and the highest posts were always reserved for Englishmen, but they did open up a relatively high-status career path that depended on learning English (Allender 2007; Fieldhouse 1982). Here, again, a colonial language was retained for at least some official functions because high levels of linguistic diversity made selecting one indigenous language difficult. (These comments also apply to Bangladesh and Pakistan, which emerged from the partition of British India, as well as Nepal, Sri Lanka and Burma, which were administered in conjunction with British India.) It is difficult to say how many Indians speak English, but 10% is a reasonable estimate and this is 120 million people—about twice the population of the United Kingdom (Crystal 2003).

Southern Africa proved hospitable to European settlement and a mix of settler and administrative colonization means that English is studied as a second language in 12 states in Southern and Western Africa[8]. Here, as in other places where Europeans settled in large numbers, there were separate school systems for indigenous and European children. The separation of Europeans and Africans was taken to extremes with the emergence of apartheid, and restricted access to European languages was a key

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[8] These countries are: Botswana, Ghana, Kenya, Lesotho, Malawi, Nigeria, Sudan, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe.

component of the mature apartheid regimes, which remained intact after independence and transfer of power to white governments (Smith 1978). Indigenous education was neglected because there was little need for indigenous administrators and European business interests—particularly in mining—preferred uneducated workers (Wright 2002). Africans, nevertheless, showed interest in learning English and with the end of apartheid, most of these states continued to use various (mostly African) languages as first languages. Most students in these states study English as a second language students (de Klerk 1999; Novick 2010).

There were few settlers British East Africa and missionaries took the lead in establishing schools for non-Europeans (Holmes 1967). The British were less enthusiastic about teaching their language than the French, so British primary schools generally used indigenous languages. This policy was more than just the substitution of an African language for a European one; it often meant developing writing systems for the former and this, in turn, made them more viable means of communication and cultural expression (Laitin 1992; Mazrui and Mazrui 1998). English was used in secondary schools and the effect of these policies was restricted access to English, giving it something of an elite status (Mazrui 2002). At the end of the colonial period, British colonies had higher primary enrollment than any other European colonizer[9] and enrollments expanded more rapidly after independence than in former French colonies. Decentralized school systems, which were more likely to be in tune with local conditions,

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[9] According to Benavot and Riddle (1988), in 1880 British colonies in Africa and Asia enrolled 20% of primary-aged children, as compared to less than 10% for other European colonizers. By 1940, the British enrolled 39% compared to 31% for the Netherlands, 24% for France, 13% for Portugal and 9% for Belgium.

were a key cause of this success (Garnier and Schafer 2006). While Kenya and Tanzania made significant moves toward replacing English with Swahili after independence, English was retained as an official language in all former colonies and also as a second language in schools.[10]

Nine countries in the Middle East teach English as a second language because of a British presence in the 19th century. First, there is a group of countries[11] where the British intervened to safeguard passage to India, though the British had little interest beyond this. Missionary activity was minimal because of well-established Islamic institutions and the British became only minimally involved in education after World War Two (Blyth 2003). The second group was the League of Nation Mandate territories—Jordan, Palestine and Iraq—gained from the partition of the Ottoman Empire. In both groups of territories there were already Islamic schools teaching Arabic and little else (Hilgendorf 2003). There were also, particularly in the Mandate Territories, universities that had been created by the Ottoman Empire as well as schools run by missionaries (and in Palestine, schools run by Jewish settlers) that taught European languages. British support for English was more a solidification of existing, if not widespread, policies (Hourani 1991). Upon gaining independence these countries kept English as a second language: some countries retained a special relationship with Britain, some had monarchs that favored English, and most found the United States an important buyer of their oil (Springhill 2001).

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[10] Most countries in Francophone or Lusophone Africa teach English as a second language as a result of work to integrate these large "blocks" of countries in the spirit of Pan-Africanism in the early years independence (David 1975; Treffgarne 1975).
[11] These countries are: Bahrain, the United Arab Emirates, Yemen, Qatar, Oman and Kuwait.

English is widely studied in the Pacific region. The British also established strategic outposts for trade in Hong Kong and Singapore, where English is now a second language. The British took the German colony of Papua New Guinea during World War One. There were a number of small islands used as British coaling stations or bases for whaling. Interestingly, Australia and New Zealand took responsibilities for many of these islands in the early 20th century, making a total of four English-speaking countries that held colonies (Fieldhouse 1982). Most of these island nations eventually became fully independent states and teach English as a second language. (Interestingly, they all have very small populations and use English as a diplomatic language, thus disproportionately adding weight to English in supra-national organizations where versions of the "one country, one vote" logic are used.) Unlike British colonies in North America or Australia and New Zealand, few of the countries that teach English as a second language saw significant British settlement (although in parts of Southern Africa they were an important minority). The use of English in these areas, then, is largely a result of the need for linguistic standardization within state bureaucracies and the inertia of these institutions, and schools, with the transition to independence.

English is studied in several countries because they were colonized, or at least administered for a time, by the United States. The United States took the Philippines from Spain in 1898 and was ambivalent about holding colonies but justified it rhetorically as "democratic uplift" and this led the United States to take the creation of schools seriously

(Go 2001).[12] The United States also administered, at least for a time, most of those areas that Japan had taken during World War Two. The unpopularity of the Japanese and relatively positive feelings toward the United States—coupled with significant material and financial aid and the presence of large numbers of American troops—secured a place for English in the curriculum of several states in the area, although the rise of Communism in the region would disrupt the continuity of some of these policies in Korea and the Republic of China (Kim 1981).

A significant number of countries where English is studied as a second language were never British or American colonies. Indeed, many have commented that from the 1990s there has been an increasing tendency to not see English as associated with a particular English-speaking country but rather as a global language (Barber, Beal and Shaw 2009; Brutt-Griffier 2002; Cha 2007; Fishman, Conrad and Rubal-Lopez 1996). Most significant in this group is China. During the 19th century various European powers carved out spheres of influence, meaning that students in China studied a variety of second languages, but English seems to have been the most popular from the 1930s. The Communists began implementing a policy to teach Russian after coming to power in 1949, but this was no sooner accomplished than a move to teaching English began. Second language education policies are now, however, standardized at the national level and today all 78 million Chinese secondary students study English (Ford 1988; Lam 2002).

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[12] The United States led all colonizers in enrollment in primary schools, with 49% of children enrolled (Benavot and Riddle 1988).

English is also widely studied in Europe. It is somewhat more difficult to characterize second language education policies in Europe because most countries give students choices of languages to study, but English has become the most widely studied language within the last decade. Much of this is driven by shifts in language education policies in Eastern Europe after the fall of the Soviet Union, but it is now more popular than French and German in Western Europe too. It is somewhat ironic that only recently has English become widely studied so close to England (Truchot 2003).

Although there are some places where it would be correct to say that English has been rationally chosen as a subject of study, these choices must be understood in the historical context of a prolific 19th century colonizer and 20th global leader that both have both worked to institutionalize English in the curricula of other states.

French as a Second Language

French is studied as a second language in several countries because the French were able to establish a number of colonies. The French made claims in the New World during the 17th century, but restrictions on economic activity and who could settle meant few settlers and slow growth. During the mid-18th century, the French lost control of the area to the British, although a significant French-speaking population remained in Quebec. Canada's federal structure—created in no small part because of this culturally distinct group—means there are no national level education policies; French is studied by most English-speaking Canadians as a second language. The French also made claims on several Caribbean islands and created French-speaking communities. When the British

took Dominica and Saint Lucia, English became more prominent, although French is retained as the second language as part of a larger compromise between French- and English-speaking groups in these nations. In Haiti a slave revolution ended French rule, and standard French is now taught as a second language because it is closely related to the French-based creole used as a first language (Quinn 2000; Walter 1993).

The French essentially ceased to be a colonial power between the loss of their New World colonies in the early 1800s and the mid-1800s when they began establishing new colonies in Africa. They were able to establish a large number of colonies and probably put more effort into teaching their language than any other colonizer. There are seven[13] former French colonies in Africa that teach French as a second language. Much of what was said about French colonization leading to its status as a first language in West Africa could be repeated, although French is a second language in parts of Central Africa, islands in the Indian Ocean, and Togo and Cameroon, taken from the Germans after World War One. Most of these countries use various indigenous languages as first languages, but continuities remain with the French education system (Garnier and Schafer 2006; Manning 1998), including the strong emphasis given to French: where French is the second language, it takes up 22% of instructional time compared to 11% when the second language is English. French remains important in law, government, education, and the media in each of these national societies, although less than one-third of the population (some places much less) has effective command of French (Simpson 2008).

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[13] The Central African Republic, Chad, Gabon, Madagascar and Mauritania were only French Colonies.

There are also African countries that teach French as a second language because they were Belgian colonies. Little was done to educate indigenous populations in the Belgian Congo until the late 1910s, although considerable efforts were then made and by 1960, more than half of primary-aged children were enrolled. Policies were pragmatic, and several major indigenous languages were commonly taught in schools (Bokamba 2008; Fabian 1986). Belgium also took over the German territories of Rwanda and Burundi, where they created a school system teaching French (Manning 1998). The Belgians seem to have been somewhat naïve about decolonization, granting it to the Congo just a few months after the subject was broached in official circles. They also relied heavily on perceived racial divisions in the administration of indigenous populations. Because of such policies, these countries all experienced a period of civil war, that slowed the expansion of education. The involvement of Belgium or France in those conflicts made the French languages seem less "neutral," (Grimal 1965) although only Rwanda has abandoned French as a second language.

French is also a second language in parts of North Africa and the Middle East. Algeria was the most important French colony and eventually home to almost a million French immigrants, which led to the creation of a sizable European school system. Attempts at educating Algerians were neglected until the early 20th century because the large number of French citizens negated the need for Algerians in the colonial bureaucracy and, as elsewhere, European business interests tended to prefer an uneducated workforce. The French did eventually make considerable—if belated—efforts to educate native children and brought more Algerian children into school in the final

three decades of colonial rule than they had in the century prior to that (Heggoy 1991). Despite a bloody civil war and the repatriation of most French colonists, the language remains a second language. Morocco and Tunisia became French protectorates in 1881 and 1904, respectively, and were the first African states to gain independence in 1956. French retains a prominent place in national society because of elite interests and because France is a wealthy, close neighbor (Angrist and Lavy 1997; Benrabah 2007; Hourani 1991). Lebanon and Syria were held as French mandates for three decades following the collapse of the Ottoman Empire. These territories were understood to be on their way to independence, and some primary and secondary schools run by missionaries and colleges set up by the Ottoman Empire already taught French. Outside of Algeria, relatively short periods of French colonization resulted in the use of French as the second language although in most places the teaching of French predated colonization (Diab 2005; Fieldhouse 1982; Hourani 1991).

Much of Southeast Asia did come under French control, although only Laos has retained it as a second language. French missionaries were in Vietnam as early as the 17th century, effective control dates to the late 19th century and Vietnam eventually did see some French settlers in the 20th century (Quinn 2000). Extra attention was devoted to creating a system of indigenous education here because the Confucian academies were a major source of resistance to French rule. By 1906, a single, French-run school system was in place, and the contents of these schools focused on the French language and history, as elsewhere. However, portrayals of indigenous culture were particularly derogatory (Kelly 2000). Communists were active in the region from the mid-1930s, and

Vietnam never fully returned to French control after the Japanese took it during World War Two (Smith 1978). The second languages of Vietnam tell much of its recent history: Russian during the Cold War, Chinese when Russian patronage waned and then English as the country reintegrated into the world economy. The French were less involved in Cambodia, but the language was retained as a second language for two decades after independence. When the Khmer Rouge came to power in 1975, schools were closed and those with knowledge of foreign languages were actively persecuted. With the fall of this regime, French again entered in the curriculum, although aid from Australia and the United States has secured a place for English as well (Clayton 2002).

French is also studied in a number of countries that were never French colonies. French is commonly studied in Europe. There are three states[14] with significant French-speaking populations where French is a common second language. With the fall of the USSR, French has regained prominence in some parts of Eastern Europe, although only in Romania is it the most widely studied. French lost its place as the most commonly studied second language in Europe to English in the 1990s (Fodor and Peluau 2003; Truchot 2003). French is a commonly taught second language in South and Central America, partially because French occupied a more prominent place in the global system when these school systems were organized (Chaudenson 2003) and, more recently, because unease about US dominance in the region has led to hesitation to teach English (Hidalgo, Cifuentes and Flores 1996). Anglophone Africa typically studies French as a second language (Chaudenson 2003).

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[14] These countries are: Andorra, Belgium and Switzerland.

French is the second most widely studied European language because the French were an important core power. However discontinuity in colonization and an episode of downward mobility after the Napoleonic period have meant a limited place for the study of French as compared to English; the failure to establish a significant settler colony has meant that, as seriously as the French have taken teaching their language, there were few other actors (besides linguistically fractured Belgium) that tried to spread French.

Russian as a Second Language

Russian is studied as a second language because Russia was able to dominate several societies in Central Asia[15] form the mid-19th centuries, although here the formation of the USSR meant territories were held until the early 1990s. Russian involvement dates to the 1840s, but administrative supervision was minimal until significant Russian settlement in the 1880s. Assimilation was a priority and education a preferred way of doing so, but Islamic schools and a lack of bureaucratic positions for educated natives kept enrollments of non-Russian children below 5% until after 1917 (Fieldhouse 1982). The Communists saw an important place for education as a means of political indoctrination, and they produced writing systems for about forty Eurasian languages so they could be used in schools (Levin 1963; Shorish 1991). A policy providing a choice of first languages remained in place through several major reforms of the Soviet education system, although in practice the choice was generally between Russian and the most widely spoken language in an area. Where other languages were

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[15] These countries are: Armenia, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan

first languages, Russian was studied from the second grade, although most Central Asian parents opted to send their children to secondary schools where Russian was the medium of instruction (Jacoby 1974). Russian is still taught as a second language, and some states have actually increased time spent studying Russian since the fall of the Soviet Union.

The Soviet Union annexed parts of Eastern Europe during the 20th century. These countries already had modern schools using national languages as the first language, and Russian became a mandatory second language. These nations had historical legacies of studying French and German that were never fully abandoned and to which they returned after the fall of the USSR. Belarus and Ukraine are the only nations where Russian in still universally studied as a second language; both have national languages similar to Russian, significant Russian populations, and both maintain close political and economic ties to Russia (Mikhalchenko and Trushkova 2003; Shorish 1991; Sokolsky 1966). As in Central Asia, a major purpose of education was the spread of Soviet orthodoxy, so language education policies were more pragmatic and often took a back seat (Grant 1983).

Dutch as a Second Language

The Dutch established a colonial empire in the 16th century and were the leading core power for time; Dutch, is as a result, one of the few languages studied in more than one country. They seemed, on the whole, more focused on commerce than other colonizers and tended to learn languages common in the markets where they traded as opposed to teaching Dutch. Thus, in Curacao and Aruba the indigenous language

Papiamentu is widely spoken, while Dutch is the second language. In Suriname, Dutch is the first language although spoken by only about two-thirds of the population (Ostler 2005). They pursued the same policy in what would become Indonesia. Where a language of administration was needed in this linguistically diverse region, the Dutch chose a widely spoken indigenous language and, ironically, set the stage for Indonesian to become the national language and first language; for all practicable purposes, the Dutch language has completely disappeared from Indonesia (de Swaan 2001).

The Dutch also established colonies around the Cape of Good Hope. Although eventually subsumed into British holdings in South Africa, this was the one part of the Dutch Empire where settlers outnumbered merchants. As a result, a variant of Dutch, called Afrikaans, has official standing in South Africa and is taught as a first language in schools serving children who speak it at home (Boxer 1965; Grimal 1965). Close links between Afrikaans and the apartheid regime as well as competition from English mean almost no Africans choose to study it as a second language (Wright 2002).

COLONIAL LANGUAGES NOT RETAINED

While colonization stands out as a primary cause of second language selection, some colonizers were not as successful in institutionalization their languages, particularly where the colonizer mounted an unsuccessful bid for core leadership. The first counterfactual case is German. The Germans claimed colonies in the late 19th century, but their colonial apparatus was small compared to that of other Europeans and, moreover, placed no particular emphasis on teaching German. They administered their

West African colonies in Swahili as far as possible, and most missionaries were Protestant and developed writing systems for indigenous languages instead of teaching German. As we have already seen, all of Germany's colonies were transferred to a French- or English-speaking power after World War One (Gann and Knoll 1987). German is a first language in five European countries[16] and a popular second language in the region but has clearly suffered a loss of prestige as a result of the Nazi era. The European Union, for example, avoids using German unless it is dealing with only German speakers (Ammon 2003; Gardt and Huppauf 2004).

The Italians also participated in colonization in a limited way. In 1911 they secured a concession on the African coast directly south of Italy. The existing population put up significant resistance, and it was not until the early 1930s that they secured control over what is now Libya. Italians did take on large public works projects, but they built very few schools. The Italians lost control of Libya during World War Two. The British held it until 1951, when it gained independence (Segre 1975), and Libya now teaches English as a second language.

A final caveat is that regardless of the language incorporated into the curriculum, studying a language is not the same as speaking it. Most obviously, not everything that is taught is learned. Particularly relevant here is that many former colonies saw large increases in population and slow economic growth, meaning there were more students but the same, or less, money to spend on education. In some parts of Africa, pupil-teacher ratios were as high as 60 to 1 during the 1960s and 1970s (Sunal 1998). Finally, we

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[16] These countries are: Germany, Austria, Switzerland, Belgium and Luxemburg.

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cannot simply assume that school systems provide fair and equitable access to these languages. This is a substantive focus of Chapter Three, but where colonial languages continue to play a major role in society (as in parts of Asia and Africa), those groups that already speak them may have an interest in restricting access to them because they function as a kind of social capital (Myers-Scotton 1993).

CONCLUSION

While differences in power between groups stand out, these historical sketches suggest several factors that influence whether or not a language will be included in a national school curriculum. At a minimum, there must be a significant number of speakers and the language must have written form. The decimation of indigenous populations in the New World and marginalization of languages with few speakers throughout the world is the major reason there are not thousands of languages taught in the world's schools: 2,000–3,000 indigenous languages are spoken in North and South America, but all students study one of four European languages and very few study any other language. Having a written form is important and we encountered several cases of written scripts being developed so that a language could be used in schools.

Beyond these minimal conditions, colonization is why European languages are so prominent in curricula globally. First, settler colonization brought Spanish and Portuguese to South America, although relatively large indigenous populations and low levels of immigration meant it took several hundred years before these languages were the most widely spoken in the region. The same mechanism brought English to North

America and the Antipodes, although in most of these areas, indigenous populations were marginalized and immigration rates were higher. The forced movement of people through slavery also tended to create speakers of these European languages. Colonization in other parts of the world—where disease did not decimate indigenous populations or political organization could check European power to some extent—introduced at least one of these languages to virtually every country in Africa and Asia.

Second, nationalism spread with the interstate system, and that ideology strongly suggests one language should represent the population of a state. Where ruling elites and most of the population used a given language, that language generally became the first language of schools. The nominal linkage between nation and state often obscures the fact that significant groups within in these states may not speak these languages. This happened in most European and American countries and in many Asian countries as well. The emergence of nationalism did not always entail deeply felt emotional ties between language and state, but the needs of technical efficiency meant that some language must be selected in which to conduct state business. The languages of colonizers were often retained as official languages—in part, because of institutional inertia and, in part, because they seemed "neutral" in that they were not associated with any particular indigenous, ethnic or religious group. In Africa, European languages remained important in post-colonial societies and states and were kept as first or second languages in schools (although they are not necessarily less important for being second languages). The appearance of the same language in more than one national curricula is not evidence

against the importance of nationalism because where this is the case, the language is generally an official language in all countries that teach it.

There are two other significant aspects of colonization. First, colonizers must have tried to teach their language. The Dutch and Germans did not, and thus these languages disappeared from their colonies when administrators left unless there were significant European populations. Second, the length of colonization also seems to have mattered. The relative absence of French in curricula in the New World is because the French were unable to maintain political control over these areas. This was also the fate of German and Italian. The use of Portuguese in Angola and Mozambique seems to be more a product of 500 years of colonization than any particular effort to provide education in Portuguese.

While missionaries appeared frequently, their influence was mixed. On the one hand, they built schools and often taught European languages even after colonial states took control of education. On the other hand, they also developed writing systems for indigenous languages. (However, they were not particularly effective from a technical point of view because conflicts between denominations meant they often interfered with each other's work and duplicated efforts.) The spread of Islam clearly is much of the driver behind the spread of Arabic, but there were linguistic reasons for why Arabic was incorporated into daily life and, thereby, became a first language. Casting the net somewhat broader to include the spread of Communist ideology, the results are again mixed in that there was some expansion of Russian but also an awareness that the message was not as important as the medium. Thus, other languages were not replaced.

It is, then, the differences in power between societies—both directly through colonization and indirectly through nationalism—that explains much (although not all) of which languages have been incorporated into national school curricula.

Chapter Three:

Colonial Language Education Policy and Inequality: Empirical Evidence from Africa, 1980–2000

ABSTRACT

This chapter examines the relationship between inequality and education, specifically the emphasis given to colonial languages in African primary and secondary school curricula. These languages almost always occupy important places in society yet are not widely spoken as first languages, meaning most people depend on formal education to learn them. A number of case studies suggest that teaching these languages less would restrict access and, thereby, increase inequality. This hypothesis is tested with data on language education policies from 32 African states from 1980 to 2000. Results show that the percent of teaching periods devoted to a colonial language as a subject of study has no effect on income inequality. However, where colonial languages are the medium of instruction, income inequality is significantly higher (net of robust predictors of cross-national inequality). The results indicate, somewhat paradoxically, that very heavy emphasis on such languages actually increases inequality by impeding progress through school, particularly for marginalized groups.

INTRODUCTION

This chapter examines the relationship between inequality and language education in primary and secondary schools in Africa. Here the languages of former colonizers still have important social functions yet most of the population must rely on formal instruction to learn them. This sets up a potential link between inequality and a particular element of the formal curriculum and this is investigated with new data on language education and existing measures of inequality (Gini coefficient for net household income) for 32 African countries in the period from 1980 to 2000. This is in contrast to a more common approach to studying inequality and education by focusing on the "hidden" or "informal" curriculum (Mckeaney and Meyer 2000). Results show no association between emphasis given to the language of the former colonizer as a subject and income inequality. Interestingly, where colonial languages are the medium of instruction income inequality is significantly higher. (Robust predictors of within country inequality are included in all models.) This suggests that where emphasis on colonial languages is very high the language becomes a barrier to further education and creates inequality, but below this (high) threshold emphasis on languages as a subject has no impact on inequality.

The following section describes the place of colonial languages in post-colonial states and summarizes the literature connecting access to inequality. This literature, however, tends to rely on more qualitative case studies, and so the next section deduces empirically testable hypotheses. Subsequent sections discuss data and methods and then present results. Results are interpreted with reference to the high level of linguistic

diversity in most African countries and the conclusion deals with implications for the literature on inequality and education.

COLONIAL LANGUAGES IN POST-COLONIAL AFRICA

Understanding the linguistic landscape of Africa will shed light on the place of colonial languages there. There are about 2,000 different languages spoken in Africa, or about one-third of the global total. Most of these languages have relatively few speakers, with the median number of speakers per language just 25,000—meaning most African languages have just a few thousand speakers (Lewis, Simons and Fennig 2013). The ultimate origins of this linguistic diversity are in human prehistory: new languages arose frequently as groups of hunter-gatherers remained isolated for generations and languages changed more rapidly in the absence of writing (Nettle 1999). The high number of languages present in Africa is something of a relative phenomenon in that linguistic diversity has declined more in other parts of the world over the past few hundred years. In Europe, state building meant linguistic consolidation as several related dialects merged into the language of state and then remaining dialects or languages were marginalized (Anderson 1983). Similar dynamics played out in the parts of Asia with relatively strong states and traditions of literacy. In the New World, European contact meant the loss of indigenous populations and languages and their replacement by just a few European languages through settler colonization. In most of Africa, however, traditions of literacy and state building were weaker (although not absent), and indigenous populations were

not decimated by European disease, so linguistic diversity remained high (Ostler 2005; Scanlon and Singh 2006).

With the colonial partition of Africa in the late 19th century, European languages were introduced to administer colonial states and used in educational systems built along European lines while leaving indigenous languages relatively unaffected (Mazrui and Mazrui 1998). With the coming of independence, colonial languages generally retained those functions and frequently became national languages (either officially or de facto), and decades after independence these languages still maintain a strong—and sometimes growing—hold on specific areas of life (Simpson 2008). These outcomes are at least in part because high linguistic diversity creates the need for a common language, yet many of the more widely spoken indigenous languages were not seen as good choices because of ties to particular regional, ethnic, or religious groups in the heterogeneous states created by colonization (Kachru 1984). As official languages, colonial languages are used by governments for internal and external communication, and in several African countries, the colonial language is the only language used in the national legislature and legal system (Brock-Utne 2008). This means they are required for employment in the government civil services that make up a large proportion of white-collar employment in Africa for most of the period under study here (Foster 1980; Mazrui and Mazrui 1998).

Where colonial languages also function as common languages, understanding them is either a formal or informal requirement for working in larger firms that draw labor from outside one community or region. These firms are likely to be in the "modern" sectors of the economy (de Swaan 2001). These languages also tend to dominate sectors

of the economy associated with higher prestige and income, such as medicine (Maher 1986) and science (Hamel 2007). These are seen as valuable where they allow for communication between ethnic or regional groups that speak different languages as well as for communication beyond national borders (Laitin 1992).

Colonial languages play a particularly important role in education. They are almost universally studied as subjects at the primary and secondary level and are typically important on the exams that grant access to higher education. They are sometimes used as a medium of instruction, in some cases from early primary school, although they are more likely to be used this way in higher grades. Colonial languages often dominate education at the post-secondary level as the medium for instruction and communication within universities, either through official policy or informal practice, and it is not uncommon that textbooks and materials for some subjects are available only in European languages. Even in cases in which the colonial language does not dominate tertiary education, it may still be more prevalent among higher-ranked institutions or in more prestigious fields of study (Altbach 1991; Altbach and Kelly 1991; Kelly 1991).

Despite colonial languages being used in these ways, they are generally spoken as a first language by a small percentage of the population in most African nations. As examples, in Gabon and Kenya less than 5% of the population speaks the colonial language as a first language, while in Botswana, Malawi and the Central African Republic, the corresponding figure is less than 1% (Lewis, Simons and Fennig 2013). Even in Mozambique, where almost half the population speaks the colonial languages as

a first language, this group is concentrated in cities, meaning there are socially significant differences between speakers and nonspeakers (Azevedo 1980).

There are a number of case studies that document some connection between colonial languages and inequality in various African countries. In Malawi, English is used extensively in higher education, meaning those who are unable to pass college entrance exams in English are prevented from further education (Kayambazinthu 1998). English is also widely used by the government and those who do not speak it are ineligible for government employment and likely to have difficulty accessing government services (Matiki 2001). Much the same can be said of Tanzania, where those who do not speak English have greatly limited chances for higher education and are unlikely to find employment in the modern sector of the economy (Rubagumya et al. 2011). Apartheid, South Africa, is an interesting case in that education policies specifically focused on limiting the black majority's access to European languages (Novick 2010). The issue is, however, not just about education and employment opportunities; surveys of individual perceptions of languages and language skills find that the English typical of black South Africans is seen as less prestigious in comparison to the English of whites who speak the language in the home (de Klerk 1999).

This general phenomenon is not particular to British colonies. Portuguese is spoken by about half of the population in Mozambique and Angola, yet there are significant inequalities, largely along urban/rural lines, in access to that language (Mugomba 1980). French is an official language and used as a common language for communication between indigenous groups in The Democratic Republic of the Congo,

although only one-third of the population speaks it, and most of them as a second language (Kamwangamalu 1997). The situation is much the same in the parts of Western Africa colonized by the French: less than one-third of the population has a functional command of French (Simpson 2008), but it is generally both an official language and a common language that must be learned through formal education (Bamgbose 2000; Djite 2000). The situation is somewhat different in North Africa, where French is still prominent even though much of the population speaks Arabic, facilitating communication both within and between countries. French is widely used in the media and in sectors of the economy that are oriented toward trade with Europe (Benrabah 2007; Hassa 2012).

TESTING THE RELATIONSHIP BETWEEN COLONIAL LANGUAGE EDUCATION AND INEQUALITY

While many of the works cited in the previous section were case studies of particular African nations, a hypothesis amenable to empirical testing is easy to induce: less access to colonial languages should lead to higher inequality. As most of the population depends on formal instruction to learn languages where schools spend less time teaching such languages, income inequality should be higher. Facility in colonial languages should mean more than higher grades in a particular subject because those who know the language are more likely to gain access to higher education, government services, and higher status or higher-paying employment.

The first independent variable is the emphasis given to colonial languages as a subject of study, measured as the percent of instructional periods in the primary and secondary curriculum. The total number of periods devoted to that subject is simply divided by the total number of periods; access is treated as a function of total exposure. Within nations, curricula tend to be stable over time but when countries do change curricula and devote more time to teaching this subject this should increase access and reduce inequality. A second independent variable measures where colonial languages are used as a medium of instruction. Where they are the medium of instruction, the entire educational systems may operate in colonial languages from early grades, although the break from primary and secondary is a more common place to change over. It is not uncommon for some subjects (such as math and science) to be taught in colonial languages at earlier grade levels and other subjects (namely other languages, but also civics and history) to never be taught in colonial languages. The dummy variable is created as a proxy for colonial languages as a medium of instruction; the variations just discussed make this a proxy measure, but where colonial languages are taught as a subject in the first or second grade, school systems are attempting to build up skills in such languages to use them as media of instruction (Alidou et al. 2006). Using colonial languages in this way would seem to represent the maximum possible exposure through formal schooling and if more exposure means more learning, this policy should lower inequality.

Inequality is measured with a Gini coefficient for net household income. The Gini coefficient ranges from 0, indicating perfect equality, to 1, indicating perfect inequality.

The Gini coefficient is sometimes multiplied by 100, as it is here. While the prestige associated with colonial languages is not captured by the Gini coefficient it would be difficult to quantify, and prestige is more meaningful where it can be transferred into material advantages. Moreover, the Gini coefficient is available for a large number of countries for many years since 1950 and is a standard measure in research on cross-national inequality.

These expectations are tested in a sample of former colonies in Africa with nationally standardized curriculum. This sample includes only those countries that centralize language education policy at the national level because of the difficulty of locating data for subnational units but also because in a sizable proportion of cases where education has devolved to state or provincial levels, linguistic differences between regions are a major cause. (A case in point is Cameroon, which has a separate educational system for its English- and French-speaking regions (Chumbow and Augustin 1996).)

OTHER EFFECTS OF COLONIZATION

The argument linking colonial languages to inequality assumes that the effects of colonization are significant and enduring. It may be wise, then, to control for other effects of colonization. First, there may be differences between colonizers. Colonial school systems were closely modeled to those found in the metropole, and there were marked differences in degree of centralization and latitude for community involvement in school systems found in French versus British colonies (Archer 1979; Garnier, Hage and Fuller 1989; Hage and Garnier 1990). The basic structure of school systems changed little when

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they were transferred to national governments at independence. Differences between former French and British colonies persist in educational measures such as enrollment rates (Garnier and Schafer 2006). Given that the basic structure of school systems created by colonizers remains and differences appear to have some consequence, a dummy variable is created to control for the identity of the colonizer.[17]

Second, there may be differences with regard to how long colonization lasted. There is great variation in the length of colonization because some colonies were established in the 16th century[18] while others were established in the 20th century. Once decolonization began after World War Two, however, the colonial empires disappeared with surprising speed (Fieldhouse 1982). There were strong regional influences, but the characteristics of individual colonies also mattered (Grimal 1965; Strang 1991). Indigenous collaborator elites and European settlers had interests in maintaining colonial rule and, interestingly, also in restricting access to colonial languages (Khasnor 1984). Special efforts were often made to enroll children of indigenous elites—such as tribal chiefs or merchants—in colonial school systems (Brutt-Griffier 2002; Foster 1985), and these groups were overrepresented in the cadre of indigenous bureaucrats that aided colonial administrations (Bray 1997; Smith 1978; Springhill 2001). Large numbers of European settlers often slowed independence either by pressing for continued colonial

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[17] Burundi, Rwanda, Tanzania and Togo were originally colonized by the Germans and after World War One transferred to a French or English-speaking power. These languages —and not German—are treated as the colonial language because German is not taught in any of these countries. Excluding these countries does not substantively affect the results. Determining the identity of the colonizer for some difficult cases, such as Cameroon or South Africa, was a moot point here because missing data for variables used here precluded the inclusion of these countries.

[18] Determining the start of colonization is problematic because many of the dates for the establishment of colonies apply to the founding of an enclave and not effective administrative control over the territory that eventually became the eponymous nation-state.

rule or by complicating schemes to transfer government functions to indigenous groups (Grimal 1965; Naylor 2000).[19] These two groups may represent a connection between delayed independence and attempts to restrict access to colonial languages. Effects of colonization are then measured with regards to decolonization, specifically, the number of years separating a given colony's independence and the year 1956, when the first African colonies (Tunisia and Morocco) gained independence.

CONTROL VARIABLES

Income inequality is widely studied, and it would be best to test the argument here in the context of a more general model of cross-national income inequality. All models below include variables for educational expansion, sector dualism, and population growth as the relationship between these variables and inequality is well understood in theory (Kuznet 1955). These variables are used with some caution because the sample here contains countries at lower levels of development and is not the kind of cross-section of counties in which much of the empirical work on income inequality has been carried out (Alderson and Nielsen 1999; Nielsen 1994).

The expansion of education first increases inequality as the composition of the workforce moves from low-wage, low-skill sectors to higher-wage and higher-skill sectors. Thereafter, increasing numbers of individuals with high levels of education bring down the wage premium on skilled labor, and the distribution of incomes begins trending

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[19] As a case in point, in several British colonies in Southern Africa white settler groups made increasing exclusionary policies—apartheid regimes—that prioritized the interest of white settlers and denied rights to blacks to such a degree that metropolitan governments would not initially recognize their independence.

back toward equality (Barro 1991; Bose, Haque and Osborn 2007; Nielsen 1994; Ram 1990; Sylwester 2002).

Income inequality should increase as the mix of economic activities in a given country shifts over the course of development, namely as it moves away from traditional patterns—particularly subsistence agriculture—in favor of more modern (industrial) types of activities. In the early stages of this process, income inequality increases as individuals leave the former sector where wages are universally low for higher wage sectors. Over time, however, income inequality should decrease as more of the population enters the modern sector (Alderson and Nielsen 1999; Alderson and Nielsen 2002; Lee 2005). Sector dualism is measured as the percentage of the labor force in agriculture minus agriculture's share of gross domestic product. This captures the extent to which wages in the traditional sector diverge from other parts of the economy.[20]

Demographics also play a role in income inequality as the shift from high fertility and high mortality to low fertility and low mortality reduces inequality because countries with high birth rates have large numbers of young, nonworking individuals who have no income (Williamson 1991). Natural population growth rate, or the crude birth rate minus the crude death rate, is then also included in the baseline model.

DATA AND METHODS

These hypotheses are tested using pooled time series data on language education policies and inequality in 32 African states, listed in Table 3.4 at the end of this chapter.

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[20] The standard model usually includes a variable for the percentage of the labor force in agriculture. However, this is not included here because of issues of multicollinearity as discussed below.

Observations are made at five-year intervals from 1980 to 2000 (inclusive) for 117 total country-years. Five-year intervals are used because curricula are stable over time and more frequent observations would not significantly increase the range or diversity of values observed. (The total number of observations is limited because less developed countries, such as those in this sample, are less likely to report to data collection agencies for a variety of reasons.) Tests for influential cases revealed that Namibia may exert undue influence on results and observations for this country were dropped.[21]

Key Variables

The variables for language education are taken from National Reports of the Development of Education and World Data on Education reports from the International Bureau of Education. These semiannual reports present nationally reported data in standardized ways. They include intended national curricula timetables, detailing the subjects to be taught in each year of primary and secondary education and indicate how many instructional periods are to be devoted to these subjects. The variable for percent of instructional periods devoted to colonial languages includes the entire primary and secondary curricula. As shown in Table 3.1, percent of periods devoted to instruction in colonial languages increases from about 18% in 1980 to 23% in 2000. (Note, however, the relatively large standard deviations.) The variable for colonial medium is coded "1"

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[21] Influence was accessed using Cook's D and Namibia's observations for 1995 and 2000 had a value of 0.047 and 0.044, respectively; both larger than the size adjusted cutoff of 0.034. Namibia is atypical among African countries for gaining its full independence very late. (It was part of British holdings in Southern Africa but effectively remained a colony of apartheid South Africa.) When these observations are included, the coefficient for independence becomes significant in Model 7.

where this language is a subject of study in the first or second year of schooling and "0" otherwise. A little more than half of the countries use colonial languages as the medium of instruction.

The main dependent variable is a Gini coefficient for net household income. These data come from the Standardized World Income Inequality Database (Solt 2009), which is a good compromise between the quality of individual data points and comparability across data points. Table 3.1 shows no trend for the Gini coefficient over time, although the standard deviation indicates that variation across countries persists.

Colonial Variables

I include a group of variables that test the effects of colonization. A dummy variable for identity of the colonizer is coded "1" if the country is a former British colony and "0" otherwise. The variable independence is the years between 1956 (when the first African colonies gained independence) and the year a given country gained independence. Data on colonization and decolonization is taken from Henige (1970) and supplemented with other historical materials in some cases. These variables are time invariant for each country and reported only for all time points in Table 3.1. About one-third of observations are from former British colonies and the sample average of just over five years of delayed independence is driven by the large number of French colonies that gained independence in 1960 in conjunction with the formation of the Fifth Republic.

Table 3.1: Descriptive Statistics for Analysis of Colonial Language Education Policies, with Standard Deviations in Parenthesis (n = 117)

	All time points	1980	1985	1990	1995	2000
Gini (net household income)	44.10 (7.56)	45.55 (7.12)	45.37 (8.78)	46.74 (9.00)	45.43 (8.39)	44.16 (6.73)
Percent of Periods	22.29 (11.40)	17.92 (10.18)	19.90 (11.96)	24.32 (12.45)	24.88 (10.05)	23.46 (11.54)
Colonial medium	0.56 (0.50)	0.60 (0.45)	0.56 (0.47)	0.56 (0.46)	0.53 (0.44)	0.54 (0.46)
Dualism	37.42 (17.03)	42.12 (16.23)	39.22 (15.78)	38.93 (17.06)	32.08 (17.71)	35.30 (18.05)
Secondary Enrollment	27.87 (21.24)	20.39 (16.39)	23.36 (17.27)	23.45 (16.78)	28.28 (19.26)	34.23 (15.32)
Population Increase	25.87 (5.86)	29.11 (4.30)	28.60 (4.81)	26.77 (4.94)	25.73 (3.91)	24.81 (5.49)
British Colon.	0.34 (0.46)					
Later Indep.	5.23 (5.13)					

Control Variables

Sector dualism, secondary enrollment, and population growth are included in the baseline model. The variable for sector dualism is expressed as the absolute value of the percentage of the labor force in agriculture minus agriculture as percentage of GDP and is created with data from the Food and Agricultural Organization of the United Nations (FAOUN 2009) and World Bank's Development Indicators (World Bank 2011). Secondary enrollment is measured as total enrollment in secondary school as a

percentage of those defined as being of school age. These data come from the World

Bank's EdStats database (World Bank 2011). Population growth is the natural rate of

population increase, or the crude birth rate minus the crude death rate (World Bank

2011). Table 3.1 shows a sizable increase in secondary enrollments while dualism and

population growth rates decrease. All three show relatively large standard deviations.

Table 3.2: Correlations between Variables for Analysis of Colonial Language Education Policies, All Time Points (n=117)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)								
(2)	0.033							
(3)	0.614*	0.480*						
(4)	0.403*	0.185*	0.306*					
(5)	-0.218*	-0.413	-0.655*	-0.549*				
(6)	0.181*	0.144	0.284*	0.491*	-0.612*			
(7)	0.318*	-0.529*	-0.242*	0.108	0.111*	0.180*		
(8)	0.523*	0.136*	0.220*	0.423*	-0.317*	0.278*	0.376*	

Correlations marked with an asterisk * differ from zero at $p \ 0 < 0.05$

(1) Gini coefficient
(2) Percent of periods devoted to colonial language
(3) Colonial language as medium of instruction
(4) Sector Dualism
(5) Secondary Enrollments (gross)
(6) Population Increase
(7) Former British Colony
(8) Later Independence

Table 3.2 shows correlations between variables. The variable for the colonial

medium shows a positive and significant relationship to inequality, although percent of

periods does not. All baseline models are significantly associated with inequality and signed as expected. None of the correlations are high enough to cause issues of multicollinearity.[22]

Estimation Procedure

The individual observations are clustered by country, and this means that observations within clusters are likely to be more similar than observations from different clusters. Where this is the case, as it is here, heterogeneity bias arises and standard regression techniques are inefficient. A random effects regression model is used for a number of reasons. First, these data show more variation between countries than within, suggesting that a random effects model would be appropriate. Second, fixed effects models are not appropriate where time invariant characteristics of a country are used because the estimated effects for these variables would be perfectly collinear with unit-specific dummies. These considerations suggest a random effects model is appropriate and statistical tests[23] indicate that this technique is efficient and unbiased here.

A second issue with pooled time series data is that the data must not trend over time. If they do, the passage of time likely affects the dependent variable, making it difficult to determine whether the independent variables were causing the changes seen

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[22] The sector dualism model usually includes a variable for percentage of labor in agriculture, which is also used to calculate dualism (recall that dualism is the absolute value of the percent of the labor force in agriculture minus agriculture as percent of GDP). The two are, therefore, highly correlated. While previous work with these two variables finds a high correlation between them (i.e., .888 in Nielsen and Alderson 1995), exploratory data analysis here found an excessively high (.920) correlation. Furthermore, when both were included, the models showed symptoms of multicollinearity.

[23] The Hausman test implemented by the "hausman" command in STATA fails to reject the null hypotheses ($p = 0.417$).

(Sanderson and Kentor 2009). The Fisher test indicates[24] that these variables are stationary. A final issue in observing the same units over time is that observations for the same unit at one point in time may be correlated with observation for the same unit at another time. Diagnostic tests indicate these data show autocorrelation.[25] Some of the more common methods for dealing with autocorrelation are not appealing or inappropriate here,[26] so autoregressive (AR(1)) correction is used.

In summary, the estimation procedure is an RE model with an AR(1) correction[27] based on the work of Baltagi and Wu (1999), which makes the method suitable for use with unbalanced panel data.

Results

Table 3.3 presents results. Model 1 is the baseline model with only control variables. Dualism has a significant positive impact on inequality, as expected, which persists across all models. The baseline model performs somewhat poorly, however. This is likely because the predictions are based on observations of countries at different levels of development and not a group of less developed countries like the sample here. A related explanation is that this group of countries may be moving through the uppermost part of Kuznet's curve where the line is relatively flat.

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[24] The Fisher test was implemented by the "xtfisher" command in STATA; the null hypotheses of a unit root was rejected for all variables ($p > 0.00$).

[25] Serial correlation was tested for with the Wooldridge test as implemented by the STATA command "xtserial" and results indicated there was indeed serial autocorrelation ($p > 0.00$).

[26] For example, the Cochrane-Orcutt approach excludes the first observation from each unit, and as the total number of observations here is low, these seem undesirable. Panel-corrected standard errors are another option, but they perform poorly where T is small and N is large.

[27] Specifically, STATA's "xtregar" command.

Table 3.3: Regression Models with Income Inequality as Dependent Variable, Random Effects with Corrections for Autocorrelation (N =117)

	1	2	3	4	5	6	7
Dualism	.215** (.091)	.204** (.093)	.196** (.093)	.196** (.085)	.223** (.091)	.184** (.087)	.158** (0.06)
Secondary Enrollments	.051 (.082)	.025 (.081)	.142 (.093)	.122 (.097)	.023 (.095)	.024 (.077)	.098 (.084)
Population Increase	.193 (.290)	.150 (.290)	.167 (.293)	.103 (.284)	.077 (.295)	.076 (.210)	.018 (.360)
Percent of periods		-.115 (.137)		-.200 (.117)	-.043 (.154)	-.128 (.101)	-.157 (.079)
Colonial Medium			13.565** (6.234)	13.879*** (3.064)			13.786** (3.323)
British Colony					3.607 (3.509)		1.222 (2.201)
Later Independence						.514 * (.285)	.117 (.281)
Constant	30.644*** (9.416)	34.744*** (10.534)	28.090*** (9.215)	31.721*** (9.823)	32.785** (9.576)	34.351*** (10.845)	33.945*** (9.243)
R2	0.16	.016	0.36	0.36	0.22	0.29	0.37
Rho	0.33	0.32	0.32	0.32	0.32	0.32	0.31

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Model 2 adds only percent of periods devoted to colonial languages and finds it has no significant effect on inequality. This variable has no significant impact on inequality in any model. This is at odds with the expectation that teaching these languages more would mean greater access and, thereby, less inequality.

Model 3 adds only the dummy for colonial language as medium of instruction to the baseline. This variable, unexpectedly, has a significant and positive impact on inequality across models and the coefficient is large. If two countries had comparable values for dualism, secondary enrollments and population growth, and one used a colonial medium of instruction and the other did not, this model would predict a Gini coefficient 13 points higher in the former. The increase in r-squared between Model 2 and Model 3 is large and statistically significant. A more detailed explanation will be provided below, but it is difficult to square our expectation of access reducing inequality with these findings.

Model 4 adds both the percent of periods and dummy for medium of instruction to the baseline model. Percent of periods has no significant effect, while colonial medium significantly increases inequality. Although Model 2 had shown that percent of instructional time was insignificant, there was a positive correlation between the two main independent variables as the medium of instruction is usually a subject to which considerable time is devoted. However, the effects of using the colonial language as a medium remain even when controlling for the percent of periods spent studying it. This suggests that even spending larger amounts of time teaching this subject does not make up for the impact of using it as a medium of instruction. Although an extended discussion

of this will be given below, note that the coefficient for the colonial medium remains quite large in these models.

Model 5 tests for colonizer-specific effects and finds that former British colonies do not differ significantly in their rates of inequality compared to other colonies. Whatever differences remain between school systems built by different colonizers, they do not seem to have an effect on inequality. This variable also captures, to a large extent, the effect of what language is taught; former British colonies in Africa all teach English (although not all countries that teach English are former British colonies). One might argue that because English is much more widely spoken globally—compared to French or Portuguese—English language skills might have a different impact on wages, but this does not seem to be the case. (Analyses not shown use French colonies as the reference category, and results remain insignificant.)

Model 6 adds a dummy for recent independence and finds a positive effect on inequality for countries that emerged from colonization later. Analysis of cases that make up this late independence group indicate that pro-colonial elites and settlers may have delayed independence. However, this is only significant in this model at a relaxed level (p<0.10) and it is not significant in Model 7 so the importance of this finding should not be overemphasized.

Model 7 is a saturated model with all variables included. Dualism significantly increases inequality as in other models. Again, percent of periods has no effect, but using colonial languages as a medium of instruction has a positive sign and large coefficient; holding all the other variables in this model constant, the difference between using a

colonial language as the medium of instruction is more than 13 points on the Gini coefficient. Late independence is not significant and there is no difference between colonizers here. Note that Model 7 has the largest r-square of any model in Table 3.3.

DISCUSSION

Time spent on colonial languages as a subject shows no relationship to inequality but using these languages as the medium of instruction has a positive impact on inequality. This is at variance with the expectation that increasing access would reduce inequality. However, where languages are used as the medium of instruction this does not really represent access to the language; rather the language is being used to teach other subjects and students who have not mastered the language are unlikely to master the material being covered. We know attendance and achievement tend to be lower where there is a mismatch between language of instruction and a student's first language (Rubagumya et al. 2011). Where students are unable to learn a language in the first few years of schooling its continued use blocks further progress and diminishes prospects for social mobility (Akinnaso 1993; Alidou et al. 2006). (Note the negative and significant correlation between secondary enrollment and the use of colonial medium in Table 3.2.) Akinnaso (1991, 1993) points to several policy "experiments" in Africa (mostly in Nigeria) where the transition to colonial language medium was delayed to the benefit of students' achievement and persistence, particularly those from rural areas.

Building on this, recall the high levels of linguistic diversity in Africa. Many individuals will grow up speaking a first language that is not widely spoken; this means

they will likely have to learn at least one other indigenous language, which would make colonial languages their third or possibly fourth language (Laitin 1992). The literature on learning point to situations called subtractive bilingualism where studying many languages can prevent effective mastery of any of them (Roberts 1995); learning four languages is harder than learning two. This linguistic barrier to learning colonial languages is distributed, to some extent, in term of social characteristics already salient as basis of inequality. Languages with fewer speakers are associated with ethnic groups that come from isolated and underdeveloped regions (Smits, Huisman and Kruijff 2008) and there is variation in the extent to which different regional or ethnic groups have participated in modern schooling (Foster 1980).

Variation also exists in the quality of education between schools. It is difficult to compare the relative amounts of variation in school systems between countries, but the low end of the distribution in Africa may be very low in absolute terms. The lowest-quality schools here lack basic resources such as textbooks, have teachers with little to no qualifications (Bing 2008), and the quality of foreign language teaching may be especially questionable (Fishman, Conrad and Rubal-Lopez 1996; Nunan 2003). Also, students from rural areas or lower socioeconomic backgrounds are likely to attend such low-quality schools while students from urban areas or higher socioeconomic backgrounds are likely to attend better schools (Blossfeld and Shavit 1993; Buchmann and Hannum 2001; Jacob and Holsinger 2008).

There seems to be a paradox here in which using colonial languages as the medium of instruction- that is, very high levels of exposure- makes completing schooling

more difficult for many students, particularly for students from marginalized linguistic groups or those of lower socioeconomic status. Some have argued that this is not so much an unintended outcome as a mechanism of elite reproduction. Given that colonial languages confer material benefits and status, the small group that can effectively use them may have an interest in restricting access. This group consists primarily of the professional classes that learned the language through education and those that speak the language in the home, generally families of European descent or that have a history of collaboration with colonial regimes (Myers-Scotton 1993). Some have suggested that these groups understood that continuing to use colonial languages as the medium of instruction after independence would cause difficulties for most students and backed such policies because they would mean fewer students from other groups would complete schooling (Akinnaso 1991; Brock-Utne 2001; Watson 1994). There also seems to be an indication that these groups supported colonial administration and may have opposed decolonization (Fieldhouse 1982; Grimal 1965; Naylor 2000; Smith 1978; Springhill 2001). This may explain the positive association between late independence and inequality observed in Model 6.

The identity of the colonizer had no effect on inequality, indicating that the differences between the structures of school system in Anglophone and Francophone Africa are not related to inequality. This variable also captured, to a large extent, what specific language is being taught; thus, it unlikely that the findings are driven by any particular feature of the languages being taught either from a linguistic standpoint (i.e., English being "hard" to learn) or global patterns of language use (i.e., English being a

global language). Rather, it seems that conducting school in languages that are not widely spoken reinforces other kinds of inequality by creating different school experiences for different groups (with the effects being most detrimental to linguistic minorities).

CONCLUSION

The upshot here is that colonial languages do play a role in inequality, not through restricting access to them as a subject of study but rather through their use as the medium of instruction where they become a barrier to continued schooling. For significant portions of the population in most African states colonial languages are a second language and for marginalized linguistic groups they are a third or fourth. Students from lower socioeconomic groups, who are likely to attend lower-quality schools, are also likely to have trouble learning these languages. Each of these disadvantages discourages further schooling and students from rural areas might experience both. At the same time, students from groups that have a history of using colonial languages get substantial exposure where such languages are used as media of instruction, further increasing the chances that they will be able to realize the benefits that come with knowing the language.

One limitation here is that the effects of private education were not controlled for. In many countries, there is a significant private sector, sometimes organized around providing higher-quality education in colonial languages. In Algeria, for example, many wealthy families send their children to schools where French is the medium of instruction, and children who attend these kinds of schools generally end up with a

superior command of that language (Benrabah 2007; Heggoy 1991). While the relative size of the private education sector may have some effect on the statistical results observed here, there is very little good quality data about private education in most African countries. However, this appears to be a relatively direct link between parental financial resources and cultural capital in the next generation and may be worth investigating in cases where data is available.

It is important to remember the usually tight linkage between inequality generating process and formal language education in Africa. While the initial expectations were rooted in an understanding of access to languages it was ultimately the mismatch between language of instruction and the languages students speak that causes inequality. This nationally institutionalized mismatch is not likely to be found outside of Africa. In the Americas the languages of colonizers are widely spoken while in much of Asia indigenous languages are used as the medium of instruction in school systems.

Table 3.4: Countries Included in Analyses in Chapter Three

Algeria	Guinea	Sierra Leon
Angola	Kenya	Sudan
Benin	Lesotho	Swaziland
Botswana	Madagascar	Tanzania
Burkina Faso	Malawi	The Gambia
Burundi	Mauritania	Togo
Cape Verde	Morocco	Tunisia
Central African Republic	Mozambique	Uganda
Egypt	Niger	Zambia
Gabon	Rwanda	Zimbabwe
Ghana	Senegal	

Chapter Four:

Loose Coupling of Second Language Education Policies, 1980–2005

ABSTRACT

Language instruction has always been central to formal education, and currently all nations include two languages in their curricula. This is a norm derived from global level understandings of schooling, as is mandating that students attend school for at least several years. However some national school systems allow students to complete all years of mandatory schooling before reaching higher grades where second languages are studied. Where this is true, nations are only ceremonially adopting the elements of the global culture that drive isomorphic processes in educational institutions and, in practice, are exposing few students to second languages. The effect of IGO memberships is somewhat fragile, but the effects of using a global language as a national language and the age of nation-state are more robust predictors. This chapter, then, points to a tendency to overemphasize isomorphism as an outcome and IGOs as a mechanism; larger trends in global integration explain much of the variation here and countries are sensitive to the relative costs and benefits of implementing these policies.

INTRODUCTION

The world polity literature has documented considerable standardization of school curricula across nations. This is true of language education, which has been the historic core of organized education, and since (at least) 1980, all nations have included a second language.[28] While the first language is an official language, often a national language studied in only one country, second languages are usually one of just a few modern languages that are widely studied (or, rarely and with decreasing frequency, a classic language) (Cha 1991; Benavot 2004; Benavot, Cha, Kames, Meyer and Wong 1991). The widespread standardization in school systems—including both mandatory attendance laws (Ramirez and Boli 1982; Boli Ramirez and Meyer 1985) and the inclusion of second languages in curricula (Benavot et al 1991)—has convincingly been shown to follow from global level conceptions of the structure and functions of formal education (Meyer et al. 1997; Meyer, Kamens and Benavot 1992).

Like previous cross-national work on curricula, my research reveals much standardization in language education policies. However, second languages are most often studied in later grades in which attendance is not always mandatory. Where this is the case, second languages are loosely coupled and few students may be exposed to second languages. Overlooking this discrepancy overstates the degree of isomorphism. Indeed, student attrition is probably the motivation for this kind of loose coupling: formally adopting both norms would allow central ministries of education to gain legitimacy at the global level while, at the same time, shielding core educational

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[28] The one exception to the norm of teaching two languages I observed was Libya during the mid-1980s, as discussed in footnote 1.

activities—putting students in classrooms with adequately trained teachers—from the costs and logistical strains of providing second language education to all students (Gamoran and Dreeben 1986).

The world polity argument suggests that fewer connections to the global culture should make loose coupling more likely, but I also hypothesize that teaching a second language will be impacted by the costs and benefits (both relative and absolute) of doing so as well as control for an increase in global integration over time. Multivariate statistical analysis with data for 62 countries from 1980 to 2005 shows that the number of IGO memberships increases the likelihood a nation will include a second language in the mandatory portion of the curriculum. However, the effect of using a global language as an official language is negative and robust, suggesting that the relative benefits of teaching a second language are important. The passage of time is also a robust predictor, suggesting the larger trend toward global integration is important. A nations' age is also a robust predictor suggesting lasting period effects from the time a nation established its mass school system.

The first section of this chapter reviews the world polity literature and focuses on studies of curricular contents and language education. The second section presents hypotheses on where loose coupling should occur and the third section describes the data and methods used. The fourth major section is devoted to multivariate cross-sectional analysis of second language education policies. The picture that emerges, then, is one in which the overall degree of isomorphism may have been overstated by others and the

effect of IGOs seems to be more of a spurious effect of overall increasing levels of global integration and less a distinct mechanism in its own right.

LANGUAGE EDUCATION IN A WORLD POLITY

The modern period, particularly after World War Two, has been a period of increasing global integration. Against this background of political, economic and cultural integration, many have pointed to the emergence, spread and deepening of a global level culture. This culture consists of understandings regarding the nature of individuals and institutions as well as norms about how they should operate. Individuals, as rational actors, are understood as the basic unit of social action (as opposed to, say, mythical beings or kinship groups). Institutions of all kinds are understood in terms of bureaucratization and rational efficiency. The nation-state has become the "taken-for-granted" political unit and its actions are generally legitimated insofar as they are democratic in content and oriented toward economic development. Nation-states are given wide latitude for sovereign action but also exist within a system of such organizations (Boli and Thomas 1997; Meyer 2006; Meyer et al. 1997). Importantly, the world polity argument makes the case that these common understandings lead nation-states toward institutional isomorphism regardless of level of development or factors particular to a given nation (Boli and Ramirez 1986).

Although originating in the West, these understandings are held to be universally applicable, and their enactment is the key mechanism driving the convergence in the structure and content of various national institutions. The system of international

governmental organizations (IGOs) and international non-governmental organizations (INGOs) is a key site for the transmission and enactment of these global norms. IGOs and INGOs enact global culture when they bring together technical specialists and bureaucrats as recognized representatives of particular nation-states that make policy recommendations in terms of the global culture. These organizations are a mechanism for dissemination of the global culture where national delegations transmit cultural elements to their home governments, where IGOs/INGOs have staffs that work with national institutions and where they have ways to enforce agreements (Boli and Thomas 1999; Chabbott and Ramirez 2000).

School systems have been held up as one of the most important sites for global culture impacting national institutions for at least two reasons. First, global level understandings of economic development stress human capital, and where education imparts skills to individuals, schools can be seen as linking the socialization of individuals to national development. Indeed, since the 1950s, statements to this effect become more common in official documents, discussing the aims of national education systems (Fiala 2006; Fiala and Lanford 1987). Second, schools link individuals to the nation-state through civic education. While overt political indoctrination is rare, history classes are likely to present the home nation in a favorable light, highlight accomplishments, and offer a general endorsement of current political arraignments (Chabbott and Ramirez 2000). At the same time, schools link individuals directly to the global culture where key elements of that culture—such as scientific rationalization—are

studied and where attention is paid to other nations in particular or to diversity and cultural awareness in general (Drori et al. 2003; Soysal and Wong 2006).

School systems are also regarded as key sites of the enactment of global norms because the substantial cross-national similarities observed in the structure of national school systems are difficult to explain with reference to level of development, economic structure, or particular national characteristics. Most obviously is that national governments take significant, if not sole, responsibility for education and have marginalized competing conceptions of organized learning, such as apprenticeships, virtually everywhere (Meyer 1992). Global culture holds that schooling is universally relevant to all children and, as a result, there has been a dramatic increase in school participation. In 1900 only one in three children globally was enrolled in primary school but in 2000 the rate was higher than 99% (Benavot and Riddle 1988; World Bank 2011). At the tertiary level, there were only 500,000 enrolled students worldwide in 1900 and the comparable figure for 2000 is about 100 million. The increase in tertiary education is significant because it is observed even in developing nations with few employment opportunities for college graduates (Schofer and Meyer 2005). These global understandings have led to similar organizational practices, and of particular interest here are compulsory attendance laws at the primary and secondary level. While the proximate causes of such laws differed between the early creators of mass school systems (Boli, Ramirez and Meyer 1985; Ramirez and Rubinson 1979), they were quickly implemented in the wave of countries gaining independence after World War Two and have now been universal for some time (Ramirez and Boli 1982). Schools even extend their influence

into children's out of school time through the use of homework and extracurricular activities in ways that are broadly similar around the world (Baker and LeTendre 2005).

There are clear similarities across nations in the pattern of curricular organization (Kliebard 1992). In general terms, school systems have moved toward delivering a broad academic (as opposed to vocational) education, and six core subjects—languages, math, sciences, social studies, arts/aesthetic education and physical education/sports—are present in similar proportions in all national curricula (Benavot 2004). Much of the remaining diversity in national curricula can be understood as the combination of a few basic patterns (i.e., those that emphasize math and sciences or arts and humanities) that are similar when present (Kamens, Meyer and Benavot 1996).

Studies that examine math, science, and other curricular subjects find general agreement in their content, emphasis and organization as well as a tendency for such similarities to increase over time (Baker and LeTendre 2005; Drori et al. 2003). The same can be said of language education and Aaron Benavot (2004) finds that official and foreign languages as well as literature take up about one-third (37%) of instructional time in the first eight grades but that time spent on official languages decreases and time spent on foreign languages increases as one moves to higher grades. All nations require the study of an official language and most require the study of a foreign language. While there has been an increase in the number of nations that require a foreign language, the amount of curricular time devoted to these subjects has remained stable from the 1980s to the 2000s.

The work of Yun-Kyung Cha addresses long-term cross-national trends in foreign or second languages. First, the number of nations including a classic language (Greek and Latin) has shrunk dramatically from 1850 to 1986 (from almost 100% to under 30%). At the same time, the study of modern foreign languages has gone from widespread (80%) to universal (99%) at the secondary level and has also become common at the primary level (moving from 0% to 63%) (Cha 1991). Second, there is a large increase in nations studying English; English was not studied as a foreign language in any independent nation as late as 1919 but by 2005 it was studied in 72% of nations.[29] While French and German were the most common foreign languages in 1850 (each accounting for just under 50%), German disappeared as a foreign language after World War One while French declined slowly and is still second to English. Spanish is studied in a small number of nations, and this is also true of Russian after World War Two.

Cha also shows that differences in the amount of time devoted to foreign language education decrease from 1945 to 1989 (Cha 1991). Cha analyzes which factors explain variation in time spent on foreign language instruction or the adoption of English in particular. In both cases, observations are grouped into two time points and then parallel analyses are undertaken for each. Ethnolinguistic fractionalization and gaining independence after 1960 predict time spent on foreign languages for earlier time periods (1945–1969) but not for later periods (1970–1986); having a widely spoken language[30] as

[29] Cha's focus on only independent nations means some trends are driven by decolonization rather than changes in education policies: where a British colony gained independence, this would appear as an increase in the number of nations teaching English even language education policies did not change.
[30] For Cha (1991), widely spoken languages are English, French and Spanish; I include a similar variable in my analysis but include Arabic, as discussed below.

a national language has a negative impact on foreign language teaching in both periods (Cha 1991). Ethnolinguistic fractionalization, IGO membership and trade dependency positively impact the likelihood of teaching English during either the 1945–1969 or the 1970–1989 period. Again, having a widely spoken language as a national language has a significant negative effect at all time periods (Cha 2006). In both sets of analyses, the disappearance of significant predictors over time is argued to mean national characteristics matter less as global norms become more influential over time.

UNDERSTANDING LOOSE COUPLING

School systems have been characterized as loosely coupled organizations in that there is typically a good deal of difference between formal policies and actual practices (Eckel 2008). However, the kind of loose coupling I observe here appears to not have been previously discussed.[31] Benavot and Cha were singled out above because we took up similar questions, used the same primary data source, and found many of the same broad patterns,[32] but we observe curricula in slightly different ways. Cha (1991, 2006) examines the entire primary and secondary curricula; Benavot (2004) uses the first eight grades; I observe only grades in which student attendance is mandatory. Interestingly, my

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[31] Meyer and Rowan (1977) suggest that loose coupling frees the technical core of an organization from close scrutiny. Other studies that comment on the place of second languages in the curricula have missed that, in practice, there are places where very few students actually study second languages in the classroom: national ministries of education have had some success in escaping scrutiny.

[32] As an example, Benavot reports that all language education activities take up 37% of the curriculum in the first eight grades of school for circa 2000. I find that first, second, and third language instruction takes 31% across the grades of mandatory schooling across my data points for 2000 and 2005. My lower figure is because such subjects to take up fewer periods in higher grades, which are more likely to be included in my measurement and to the fact that Benavot seems to always include "literature," which I did not unless it was clear which language it corresponded to.

method identifies cases in which a second language is in the formal curriculum but instruction does not begin until a grade where attendance is no longer mandatory.

I interpret this as an example of loose coupling, where different elements of formal organizations show some relation to each other but are not fully integrated (Orton and Weick 1990). Adopting the norms that govern the formal operation of schools grants legitimacy to national educational systems (Meyer and Rowan 1977), but carrying out these activities in the functional core of school systems—classrooms where students and teachers interact—requires resources and can be logistically demanding (Coburn 2004; Hallett 2010). Having mandatory attendance laws and teaching a second language grants legitimacy to school systems, but if second language instruction could be delayed until a grade where attendance is no longer mandatory the costs can be significantly defrayed because in many countries most students do not persist beyond the years of mandatory schooling.[33] This is an important, but overlooked, kind of variation between educational systems and understanding where it happens can tell us about the implementation of global norms more generally.

Previous research suggests several hypotheses regarding where to find loose coupling of second languages. Most obviously, the global culture argument suggests that it would result from nations not being adequately exposed to global norms. Given the importance of IGOs in transmitting these norms:

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[33] It would be wise to remember that American enrollment patterns—where a large section of the relevant age group is enrolled in college—are atypical even compared to other high-income countries; in many developing countries only a small percentage of students even completes all mandatory years of schooling (Buchmann and Hannum 2001).

H1) Nations with fewer IGO memberships will be less likely to compel students to study a second language.

It might also be wise to test expectations from a competing understanding of the global order. World-systems theory posits that economically grounded conflict between geo-politically unequal nation-states is the central global dynamic, and peripheral nations are more constrained in their ability to set policies at variance with global norms. Core nations have also acted in ways that promote their own languages in the periphery, such as making international aid contingent on the recipient country studying the language of the donor (Altbach 1991; Kelly 1991; Phillipson 1992). Thus:

H2) Core nations are less likely to compel students to study a second language.

Another group of explanations for loose coupling is suggested by considering the resources needed to effectively teach a second language (Weick 1976). Obviously, training second language teachers and providing educational materials takes resources that could be used elsewhere in school systems (or in national bureaucracy, more generally). Thus one might expect:

H3) Nations with a lower GDP per capita will be less likely to compel students to study a second language.

Costs can also be relative. There are relatively few languages—such as English, French, Arabic and Spanish—that have large numbers of speakers spread across more than two or

three nations. The benefits of speaking these languages—in terms of access to information and facilitation of communication—are both larger and more certain than for other languages (de Swaan 2001). Nations where these widely spoken languages are already used as the official language would seem unlikely to realize many additional benefits by teaching a second language. Thus:

> H4) Nations where the official language is also a widely spoken global language will be less likely to compel students to study a second language.

The costs of language education policies may vary with the level of linguistic diversity. In particular, where there are many indigenous languages, selecting an official language is sometimes politically contentious and, regardless of the language selected, some teachers are likely to need training before they can teach the first language (Kachru 1984). Selecting a second language may entail similar political and economic costs and loosely coupling the second language to the curriculum may defray these costs.

> H5) Nations where there are more languages spoken will be less likely to compel students to study a second language.

The age of a nation may be important for understanding the lose coupling of second languages. More established members of the international order might be better able to resist pressures to conform to norms that are not in their interest. At the same time, given the high levels of institutional inertia in school systems, it may also be that

school systems which were established when mandating a second language was less common have only loosely coupled that requirement.

H6) Older nations will be less likely to compel students to study a second language.

I also control for the passage of time. There have been significant increases in global integration- in political, economic and cultural terms- during the period under study (Held, McGrew, Goldblatt and Perraton, 1999) and over a longer historical time frame (Chase-Dunn 1989). It would be difficult to pick out a single measure to address all these trends, yet several of the variables here (including the dependent variable) show clear trends over time. Therefore a variable is included to control for the passage of time.

DATA AND METHODS

These analyses address the period from 1980 to 2005, corresponding to the most recent period of increasing global integration. The population of interest is nations with nationally standardized second language education policies. This excludes those countries where education is a local, state, or provincial prerogative. It is unclear, theoretically, how relevant global level norms are at the local or provincial level and, empirically, there are comparability issues with data from subnational units. Some cases must be excluded because of missing data, as is common with cross-national work, making for a total of 62 nations (with observations for at least two time points), as listed in Table 4.4 at the end of this chapter. Analysis of residuals indicated no problematic cases.

Dependent Variable

Our interest in whether or not it is mandatory to study a second language suggests a dichotomous dependent variable. For a given country-year, if second language instruction begins in a grade lower than the mandatory number of years it is coded as "1"; where instruction begins in a grade where attendance is not mandatory the county-year is coded "0." The primary source is the International Bureau of Education's National Development of Education and World Data on Education reports, which contain a variety of self-reported data on national school systems. While there is some difference between official policy documents such as these and actual classroom practice (Benavot and Gad 2004), it is unlikely that second language instruction would begin one or more grades earlier than policy documents indicate. Table 4.1 shows that just over half of the countries required students to study second languages at the beginning of the period here, and this increased to about 90%, but even in 2005, not every country was mandating that second languages be studied.

Independent Variables

Independent variables are selected with reference to the hypotheses discussed above, specifically: (1) the number of IGOs a nation belongs to, (2) world-system position, (3) a national language of wider communication, (4) linguistic diversity, (5) age of country, and (6) gross domestic product per capita. All are measured at five-year intervals, and Table 4.1 presents descriptive statistics for these variables.

Table 4.1: Descriptive Statistics for Analysis of Loose Coupling, with Standard Deviations in Parenthesis) (N =271)

	All time points	1980	1985	1990	1995	2000	2005
Mandatory to study second language	0.79 (0.40)	0.58 (0.51)	0.68 (0.47)	0.69 (0.47)	0.74 (0.45)	0.92 (0.28)	0.93 (0.26)
IGOs	64.57 (18.31)	50.94 (9.42)	55.87 (93.17)	63.35 (15.94)	65.98 (18.75)	69.82 (18.66)	71.26 (17.85)
World-System	1.435						
Language of Wider Communi-cation	0.41 (0.49)						
Number of languages	24.35 (43.66)	17.22 (33.01)	22.57 (43.94)	24.23 (50.54)	22.88 (36.76)	24.75 (45.47)	27.22 (46.11)
Age	70.62 (73.06)						
GDP per capita	6,701 (11,425)	4,126 (6,177)	3,532 (4,814)	6,238 (9,792)	7,238 (11,801)	6,679 (10,659)	9,775 (15,624)

The number of IGO memberships was taken from the Correlates of War dataset (Pevehouse, Nordstrom and Warnke 2004) and the number of memberships was simply summed, with associate memberships counted as one-half. There is a clear upward trend in this variable over time, moving from 50.94 in 1980 to 71.29 in 2005.

World-systems position is measured with Snyder and Kick's (1979) classic measure, as updated by Bollen and Appold (1993). Nations are assigned to a position based on block modeling of trade flows, treaty memberships, military interventions and

diplomatic relations. This is a trichotomous variable with peripheral nations coded "1," semiperipheral nations coded "2," and core nations coded "3." Although mobility within the world-systems is possible, it is a long-term process so this variable is treated as time invariant here. Two-thirds (65.6%) of observations are from peripheral countries, one-quarter are from semiperipheral countries (25.3%), and about one-tenth (9.1%) are from core nations.

Widely spoken languages are defined here as those with more than 100 million speakers spread across four nations. *Ethnologue* (Summer Language Institute) was used to find the number and distribution of speakers and the languages of wider communication here are English, Spanish, French, Portuguese and Arabic. Nations that had one of these as an official language were coded as "1"; those that did not were coded as "0." This is time invariant (no nation here changed official language), and 41% of observations are supplied by nations with languages of wider communication.

Linguistic diversity is the number of languages with more than 10,000 speakers in a given nation and is taken from various editions of *Ethnologue* (Summer Language Institute). The fact that many languages have few speakers and tend to be concentrated in certain parts of the world makes for pockets of high linguistic diversity—as in India, Indonesia and Nigeria, with more than 250 such languages (Calvet 2006). This variable was logged to reduce skew (skewness = 3.23 and after logging skewness = .62) for the multivariate models although the unlogged version is presented in Table 4.1. The mean

number of languages across all observations is 24.35, and there is some tendency for this to increase over time (although the global trend is toward declining linguistic diversity).[34]

Gross domestic product per capita is measured in year 2000 US dollars and taken from the World Bank (World Bank 2011). This variable shows right skew (skewness = 2.52) and is logged (after transformation skewness = 0.22). As with languages, the logged version is used in the multivariate models, but Table 4.1 presents descriptive statistics before transformation. There has been considerable growth in per capita GDP, with the mean moving from $4,126 in 1980 to $9,775 in 2005.

The age of a country is coded as the number of years of independence between 1800 and the year of observation. Choosing the year 1800 means that those countries that were never colonized all have the same (relatively large) values. The group of countries in the New World that gained independence in the early 1800s also has large values. There is then a gap in decolonization until after World War One with countries in the Middle East and parts of Asia falling toward the middle of the distribution and relatively lower values for those countries in Africa that did not gain independence until after World War Two. The overall average is about 70 years, and this is only reported for all time points as the mean for this variable simply changes by five years between time points. Date of independence was taken from Henige (1970) and the start year of 1800 determined with reference to historical materials (especially Fieldhouse 1982).

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[34] National increases are from the movement of people bringing languages to a given nation. The global trend toward declining diversity is from the loss of languages through the assimilation or disappearance of small indigenous groups with unique languages. Said differently, large numbers of languages are disappearing in some nations while the remaining languages are spreading across countries.

I control for the passage of time by including a variable for year, which equals one for 1980 and six for 2005.

Table 4.2 shows bivariate correlations among all variables used here. There are significant positive correlations between IGO memberships and year, indicting that countries that are members of more IGOs are more likely to mandate second languages be studied as are all countries at later time points. There are significant negative correlations between world-system position and age, indicating that countries in the core and older countries are less likely to mandate second languages be studied. Interestingly, IGO memberships show significant positive associations with all other variables here. The correlation between the two variables that address time - year of observation and age of a country- is significant but not large.

Estimation Procedure

Logistic regression allows modeling binary data dependent variables—where the range of possible values is restricted to zero or one—with regression techniques. The logit link function is employed here, and all results presented are odds ratios, which can be interpreted as the effect that a one-unit change in that independent variable has on the predicted odds of making the study of a second language mandatory (or the odds of the dependent variable being one instead of zero). An odds ratio less than one means that an increase in that variable *decreases* the predicted odds of making a second language mandatory while values greater than one *increase* the odds of making a second language mandatory.

The logistic model here incorporates a unit-specific random intercept to deal with the correlations between responses. Individual data points are not truly independent observations because they are clustered together by nation. Unobserved variables (such as climate or the lasting effects of specific historical experiences that are difficult to observe) can cause within cluster correlation of the error term generated by standard regression. A random effects model is an appealing way to deal with these difficulties and is used[35] here for several reasons. First, variation is greater between units than within them, suggesting a random effects model may be more appropriate. Second, fixed effects models are often inconsistent in the context of logistic regression because it is not possible to estimate the effects of independent variables for cases where the dependent variable is all "0"s or all "1"s; this problem is more severe for small clusters, and many of the countries here have observations for just four or five years (Rabe-Hesheth and Skrondal 2005; Frees 2004).

Previous offers little guidance on how the variables here should enter models. I include (logged) GDP per capita in all models and then add variables one at a time and in combinations that test the more salient possibilities.

RESULTS AND DISCUSSION

Table 4.3 presents the results of the random intercept logistic regression models predicting the inclusion of a second language in the mandatory curriculum. Models 1 and 2 test the expectations of IGO memberships and world-system position. Larger numbers

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[35] Specifically STATA's "xtlogit" command.

Table 4.2: Correlations between Variables for Analysis of Loose Coupling, all time points (n=271)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)								
(2)	-0.090							
(3)	0.196*	0.175*						
(4)	-0.341*	0.335*	-0.082					
(5)	0.192	0.276*	-0.006	-0.115*				
(6)	-0.110*	0.475*	0.380*	-0.135*	-0.080*			
(7)	0.091	0.296*	0.282*	0.239*	-0.431*	-0.141*		
(8)	0.251*	0.465*	-0.001	0.057	0.035	0.116*	0.152*	

Correlations marked with an asterisk * differ from zero at p 0 <0.05

(1) Mandatory to study second language
(2) IGOs
(3) World-System
(4) Language of wider communication
(5) Number of Languages
(6) Age
(7) GDP per capita
(8) Year

of IGO memberships significantly increase the likelihood that studying a second language is mandatory, indicating that IGOs are a mechanism for the transfer of normative elements of a global culture. World-system position has a significant positive effect on the likelihood that teaching a second language is mandatory; core nations are

significantly more likely to compel students to study second languages than peripheral nations.[36] Model 6 includes both of these variables, and neither has a significant effect.

Models 3 and 4 test the relative cost of incorporating a second language into the mandatory curriculum. Having a language of wider communication as an official language significantly decreases the likelihood of including a second language. This confirms the expectation that where many people already speak a language of wider communication the usefulness of teaching a second language is reduced. In Model 4, the number of languages in a nation has no effect on whether a second language is included in the mandatory curriculum, indicating that the political costs associated with selecting a first or official language are not likely to be the same for second languages in school curricula. Model 7 includes both variables and the effects of each remain the same.

Model 5 finds that the age of country has a significant negative effect, meaning that younger countries are more likely to mandate a second language. These school systems were set up at a time before the widespread institutionalization of second language education and have had some success resisting isomorphic pressures.

As for the control variables, GDP per capita is not significant in any model, and this runs against the expectation that the material costs of providing instruction in a second language may influence the likelihood of making it mandatory. The variable for the year is significant and positive in all models, indicating that the likelihood of teaching a second language increases over time net of any other variable. This confirms the

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[36] Kentor (2000) developed a continuous measure of world-system position based on a nation's difference from the global mean of gross national product, gross domestic product and military spending. This means more variation between nations as well as variation within nations over time. Separate analysis with this variable were substantively similar, showing a significant effect only in Model 1.

expectation that the overall trend towards increasing global integration would affect the outcomes observed here. The effect of this variable seems to blunt much of the impact of IGOs compared to other investigations that use this variable alone.

Model 10 is a saturated model that shows the same basic pattern as results from other models. Speaking a language of wider communication significantly decreases the likelihood and the effects of late independence remain, although no other independent variable is significant.

CONCLUSIONS

This chapter investigated why some nations have implemented global norms for teaching two languages and mandating attendance but have not implemented these policies in such a way that all (or at least most) students remain in school long enough to study the second language. While connections to the global order play a role in explaining where second language education policies are loosely coupled, the passage of time and country-specific factors like the age of the country and other languages used are more robust predictors. These findings, then, make nation-states seem more like agents that weigh the relative costs and benefits of implementation and less like passive enactors of norms. Three issues deserve further comment.

Table 4.3: Logistic Regression with Second Language in the Mandatory Curricula as Dependent Variable, Showing Log Odds (N= 271)

	1	2	3	4	5	6	7	8
IGOs	1.137** (1.178)					1.015 (.0447)		1.034 (.042)
World-system		12.920** (16.008)				11.332 * (15.223)		1.914 (1.759)
Language of wider communication			0.046** (.059)				0.020** (.029)	.003** (.008)
Number of languages				0.823 (.373)			0.463 (.251)	.322 (.254)
Age					0.967** (.011)			0.961** (.011)
GDP per capita	1.158 (.746)	0.867 (.423)	1.856 (.866)	1.272 (.553)	3.209** (1.729)	1.823 (.422)	1.492 (.744)	1.606 (1.178)
Year	2.015** (.558)	2.508*** (.625)	2.194*** (.527)	2.325*** (.554)	2.664 (.678)	2.369** (.715)	2.428** (.617)	2.098** (.725)

First, the finding that IGO memberships are not a robust predictor of the implementation of global norms suggests that the growth of IGOs may be more of an outcome of increasing levels of global integration- in economic, political and cultural terms- and less of a distinct driver of the spread of a particular normative order. Simply including the number of IGOs in regression models without accounting for their large increase overtime, as many in the world polity tradition do, risks confounding their effect with increasing levels of global integration of all kinds. At the same time, the finding that core states are more likely to mandate the study of second languages runs counter to the expectation that these states may be able to force weaker states to study their languages. The effects of world-system position are, likewise, fragile. The two theories, however, are linked in that elements of the global culture spread by IGOs originated in the small group of Western countries that has been the core of the world-systems for the past few hundred years.

Second, the age of a country is a robust predictor of lose coupling and older countries are more likely to structure their school systems in this way. An analysis of individual cases reveals that the dynamics of colonization have much to do with this. There are a handful of countries that were not formally colonized- Iran, Saudi Arabia and Turkey- that do not mandate second languages be studied. This policy is also more common among countries- mostly in South America- that emerged from colonization during the 19th century. Conversely, those countries that emerged from colonization most recently are most likely to mandate the study of a second language. When these countries became independent the study of second languages was more common and various kinds

of isomorphic pressures (as well as internal political dynamics discussed in Chapters Two and Three) mean that these nations made it mandatory to study second languages. Ministries of education are sensitive to prevailing norms in an increasingly dense global network, but can also resist those norms.

Third, with regard to the costs of second language education, GDP per capita is robustly insignificant, and this counters a purely resource-driven explanation. Teachers are paid in local currency and few activities in primary and secondary school depend on resources beyond the national level. At the same time, where an official language is a global language, countries are much less likely to teach two languages. Indeed, there is a certain logic to this in that these policies are pursued out of a desire for symbolic legitimacy, and the material costs of tight coupling do not seem as important as the anticipated benefits that might follow for countries whose first language is not widely spoken.

These findings suggest the case for isomorphism may be overstated and that increasing numbers of IGOs is more a product of overall levels of global integration than a distinct mechanism for the transmission of global norms. Country specific factors, particularly age and relative cost, play a significant role in the implementation of global norms here.

Table 4.4: Countries Included in Chapter Four

Albania	Iran	Philippines
Algeria	Iraq	Poland
Bangladesh	Japan	Romania
Bolivia	Jordan	Rwanda
Bulgaria	Kenya	Saudi Arabia
Burundi	Kuwait	Sri Lanka
Cambodia	Laos	Sudan
Chile	Lebanon	Sweden
China	Libya	Tanzania
Denmark	Malawi	The Gambia
Ecuador	Malaysia	Togo
Egypt	Mauritius	Tunisia
El Salvador	Mexico	Turkey
Finland	Mongolia	Uganda
France	Morocco	United Arab Emirates
Ghana	Nepal	Uruguay
Greece	Netherlands	Zambia
Guatemala	Nicaragua	Zimbabwe
Honduras	Norway	
Hungary	Pakistan	
Indonesia	Papua New Guinea	

Chapter Five

English Language Education and Economic Growth:
Empirical Evidence, 1980–2005

ABSTRACT

English is the most widely studied second language in primary and secondary schools globally and this policy is commonly discussed as promoting economic growth. Policy makers are not clear on how, but there seems to be at least two plausible mechanisms. First, English is widely used in international business and where populations have more or better English skills, trade should increase. Second, English is widely used in science and English-speaking countries dominate research and development spending, thus, knowledge of English should aid in the inward diffusion of technology. These expectations are tested with pooled time series and cross-sectional data from a large number of countries where English is not a first language. Results show that time spent on English language education has a significant positive association with GDP per capita. This suggests that the curriculum may be profitably disaggregated in examinations of human capital formation, although the policy implications of these findings are less clear.

INTRODUCTION

The English language is spoken as a second language by several hundred million people—300 to 700 million (depending on the level of proficiency)—spread across every country on earth and is the most widely used language in global organizations: it seems fair to call English the global *lingua franca* (Ostler 2010). Given this fact, it seems reasonable to ask whether there are advantages for those who are able to use English. This chapter tests the hypotheses that teaching English as a second language in national primary and secondary school systems should have a positive effect on gross domestic product (GDP) per capita.

Indeed, several countries have explicitly justified beginning teaching English in terms of economic growth. For example, in 2005 Mongolia switched from teaching Russian to English and specifically linked this policy to economic growth (Brooke 2005). Countries such as Japan, that have long taught English, have justified increasing emphasis on this language in terms of economic growth (Gottlieb 2007). Even countries such as Hong Kong, Singapore, Botswana and the Sudan that teach English for reasons directly linked to colonization now talk about that policy, at least in part, in terms of economic growth (Holsinger and Jacob 2008; Simpson 2007a; Simpson 2007b). Providing English language education to school children has become "taken for granted" in most nations precisely because it has been conceived of as promoting development (Cha 2011). The material benefits of knowing English figure prominently in claims made by those providing English education for a fee (Prendergast 2008). While these claims can be understood as "advertising", the English language teaching industry was estimated

at approximately $9 billion dollars in the late 1980s (McCallen 1991) and is now four times that (EducationFirst 2011). Clearly somebody is "buying it."

Neither policy documents nor advertisements are forthcoming about exactly how English leads to the benefits evoked, but there are two plausible links between English and national level economic development. First, inward diffusion of technology has been shown to facilitate growth, and English is clearly the language of global science and technology: English skills may grant access to more technology. Second, English is widely used in international business and appears to be the language used when trading partners share no common language: English skills may mean more trade. Empirical analyses below address the effect of teaching English as well as the effects of increasing time spent on English where it is taught.

This chapter draws on a literature that understands education as creating human capital and facilitating economic growth. There have been relatively few attempts to parse the curricula and measure how emphasis on particular subjects relates to national level outcomes such as growth, so this line of inquiry may also light on the extent to which national level differences in curricula can profitably be disaggregated.

This chapter first reviews the literature linking education to the creation of human capital and the facilitation of growth before fleshing out the two mechanisms named above. The sample is large number of countries where English is not a first language.[37] Data and methods, both cross-sectional and with pooled time series, are described in the third major section. Results show a significant positive impact of time spent on English

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[37] This list can be found in Table 5.6 at the end of the chapter.

language on GPD per capita. The implications of this, in terms of human capital formation and as justification for teaching English, are discussed in the conclusion.

THE LINK BETWEEN ENGLISH LANGUAGE EDUCATION AND GROWTH

The case linking English to growth will be made below, but there is already extensive literature linking education to economic growth. National level economic growth is argued to follow where better-educated and more productive workers increase total output and as higher individual wages aggregate to higher national incomes (Rubinson and Fuller 1992). A positive relation between education and growth is observed when education is measured as enrollment rates or ratios (Barro 1991; Meyer and Hannan 1979), average levels of school attainment (Barro and Lee 1993) and increases in spending on education (Baldacci et al. 2008; Baldacci, Guin-Sui and Mello 2003; Poot 2000). Increasing levels of education also have positive externalities, such as improvements in health, which effect economic growth through indirect channels (McMahon 1998).

This conception of education as a development-inducing panacea has not gone unchallenged to be sure. First, there is a level of analysis problem in that the positive effects of education on individual wage levels do not necessarily translate into macro-economic growth (Rubinson and Browne 2008). Second, education is often measured with enrollment ratios, but this flow of students through schools is not the total stock of education that is of more direct consequence for development (Wobmann 2003). Third, the effects of education are not always found to be uniform across levels of education,

countries, or time periods (Benavot 1992b; Judson 1998; Petrakis and Stamatakis 2002; Psacharopouls 1994; Sianesi and Van Reenen 2003). Some researchers have shown that it is the quality of schooling, not the quantity, that matters most for economic growth (Hanushek and Kim 1995; Lee and Barro 1997; Sianesi and Van Reenen 2003).

Parsing education in terms of emphasis given to various parts of the curriculum—and not treating it as an undifferentiated process—may resolve some the uncertainty in the link between education and economic growth. A few studies find a connection between math and science and economic growth (Benavot 1992a; Lee and Barro 1997; Ramirez et al. 2006).[38] Languages can be understood in terms of human capital in that they are skills embodied in individuals that allow them to produce economic value, and there are a number of studies that link individual language skills to higher wages (Grin 1996). The hypotheses here is that by teaching the most widely spoken international language school systems create human capital that drives national level economic development. There is, to my knowledge, no other published work that focuses specifically at the connection between teaching foreign languages and economic growth. However, Lee (2012) uses national averages from tests of English language proficiency and finds significant positive correlations between those scores and national economic growth.[39] There is, then, some evidence supporting the idea that competency in English

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[38] From a historical perspective, there is some evidence that the emphasis given to science and technology education in Germany in the late 19th century played a role in the increased rates of economic growth in that country in the early 20th century (Garnier and Hage 1990).

[39] Lee (2012) uses the Test of English as a Foreign Language (TOEFL), but this measure has a high degree of self-selection bias. The exam is taken primarily by those who plan to enroll in a college in an English-speaking country, and the fee to take the test is currently US $160–240 in most countries. Several shifts in format mean there are few consecutive years of comparable data. At any rate, this author had no success in securing access to this proprietary data.

can lead to national economic growth and the following subsections will discuss specific mechanisms.

Technology

One path linking foreign language education to economic growth is the diffusion of technology. When understood as instructions on how to use raw materials, technology promotes growth by increasing efficiency or introducing new production processes (Nelson and Phelps 1966; Romer 1990; Romer 1998; Solow 1957). There is evidence that education increases productivity at the national level by speeding technological "catch-up" or allowing developing nations to find, use, and implement more advanced technology from abroad (Benhabib and Spiegel 1994; Rodgers 2004). To the extent that technology depends on ideas that are not wholly proprietary and can be captured in written documents, the ability to access and understand those ideas through the language they are recorded in should facilitate growth. Some researchers have found that sharing a common language positively impacts technology transfer (Guellec and de la Porreri 2001; Keller 2001), and English may be particularly efficacious in this regard.

There are several channels through which knowledge of English may grant access to technology and information. First, English dominates academic publishing. About half of all academic research was published in English in the 1980s and in some disciplines almost all publication is now in English. While there is certainly variation in the propensity of scholars to use of English between disciplines and nations, English is dominate in the physical and natural sciences where it seems most likely that one would

find the kinds of knowledge that could be counted as growth facilitating technology (Crystal 2003; Hamel 2007; Swales 1997). Second, English is particularly important in industrial research and development. These activities are highly concentrated in wealth countries, with the United States alone making up 47% of the total and with other wealthy English-speaking countries (Canada, the United Kingdom and Australia) among the ten largest spenders (Keller 2001). Third, students who study abroad at the tertiary, and especially the post-graduate, level can be conduits for technology transfer and where students develop English skills at the primary and secondary level, they should be more prepared to take advantage of such opportunities. Indeed, just over 40% of internationally mobile post-secondary students attend school in an English-speaking country (Rodgers 2004). Fourth, English may link to useful information through the Internet because 70% of public web pages are primarily in English (O'Neill, Lavoie, and Bennet 2003). Not only would high levels of English skills increase a population's ability to access this information, but countries with more or better English skills build information technology infrastructures faster (Ono 2005).

Trade

Exports as percent of GDP are a robust positive predictor of economic growth and there is evidence that a common language increases trade between countries (Boisso and Ferrantino 1997; Foroutan and Pritchett 1993; Frankel 1997; Guo 2007; Havrylyshyn and Pritchett 1991; Melitz 2007; Rauch 1997). While there is some ambiguity about what exactly promotes trade under these conditions, a shared language presumably lowers

communication costs and allows for interpersonal interactions upon which trust can be built (Fink, Mattoo and Neagu 2005).

The United States, Canada, Great Britain and Australia all use English as a first language; combined, they make up just under one-third of world GDP, making this an important group of countries to trade with (World Bank 2011). English also seems to be the language used when trading partners from different countries share no common language. English proficiency, as measured by national averages of the Test of English as a Foreign Language (TOEFL), positively predicts trade between countries that share no common language (Ku and Zussman 2010). English is also used extensively by international companies and other organizations that span national boundaries, and surveys of international corporations indicate that substantial portions of employees at international corporations use English regularly for internal and external communication (Botting 2010; Louhiala-Salminen and Kankaanranta 2012). Outside of the business field, upward of 80% of international organizations list English as one of their official languages, one-third list it as their only official language, and almost the only organizations that do not are dedicated to the promotion of some other language (Crystal 2003).

Trade may also be an indirect link to technology as developing countries' total factor productivity—or the total economic output unexplained by traditional measure and presumed to be caused by technological development—is positively related to trade with developed countries (Coe and Helpman 1995; Coe, Helpman and Hoffmaister 1997).

Because of the large research and development budgets in English-speaking countries trade with these partners is especially likely to lead to technology spillover.

DATA AND METHODS

Sample and Time Frame

The population of interest here is countries with national systems of education. This excludes countries where states or provinces have separate education systems because collecting data on subnational entities raises issues of comparability between such units in different nations, and there are problems of data availability.

Observations are made at five-year intervals from 1980 to 2005 (inclusive). National curricula are slow to change (as evident in Table 5.1) and yearly observations would not increase the range or diversity of values observed on the main independent variable. It was possible to observe which language was taught for 120 countries, but observing how much English is taught is relevant only for the subset of 43 countries that did teach English. This is discussed in the next subsection and indicated in Table 5.6 (at the end of the chapter), showing which countries are included in analyses here.

Key Variables

The dependent variable is GDP per capita, the sum of gross value added by all residents of a country divided by midyear population of the country. Data is from the World Bank and expressed in year 2000 US dollars (World Bank 2011). The raw data show considerable skew and were logged before analysis, except for in Table 5.1, which

shows unlogged GDP per capita. While values do increase over time—from about $2,500 to about $8,500—large standard deviations indicate substantial variation across countries.

The effects of English-language education policies will be modeled with both cross-sectional data and pooled time series. This is measured in ways that distinguish between countries that do and do not teach English and show how much emphasis is given to English where it is taught, but the coding schemes employed are described in detail in relation to each set of analyses below. Data come from the International Bureau of Education's National Reports of the Development of Education and World Data on Education.

Previous research has indicated that the quality of schooling affects the formation of human capital, although measuring quality presents both conceptual and technical issues (Hanushek and Kim 1995). No suitable measure of English-language education quality could be found, but pupil-teacher ratios are a reasonable measure of education quality in general and are widely available (Lee and Barro 1997). Primary school pupil-to-teacher ratios[40] are taken from UNESCO's Statistical Yearbook (various years). This ratio decreases from about 35 students per teacher in 1980 to 26 in 2005, indicating an improvement in quality.

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[40] There may be a mismatch primary schools' ratios and second language education as the latter tends to happen at the secondary level, although there are certainly countries where second language education begins at the primary level (Benavot 2004; also Chapter Four here). Primary ratios are available for more countries than secondary ratios are, and the two are highly correlated (r = 0.78 with this data).

Table 5.1: Descriptive Statistics (N = 406, except for "Percent" which only applies to those countries that do teach English so N = 149)

	All time points	1980	1985	1990	1995	2000	2005
GDP per capita	5,937 (10,436)	2,442 (3,585)	2,142 (3,106)	3,325 (5,741)	5,314 (8,252)	5,554 (8,252)	8,419 (12,245)
Proportion Teaching English	0.51 (0.50)	0.46 (0.50)	0.48 (0.51)	0.44 (0.50)	0.51 (0.50)	0.53 (0.50)	0.53 (0.49)
Percent, where taught (no 0s)	9.45 (5.40)	8.16 (4.40)	8.54 (5.24)	9.63 (4.90)	10.08 (6.17)	9.41 (5.43)	9.85 (5.82)
Pupil Teacher Ratio	30.27 (14.24)	35.09 (13.51)	33.39 (13.03)	32.69 (14.97)	29.11 (13.95)	27.16 (13.62)	26.61 (14.27)
Secondary Enrollments	54.34 (33.15)	42.77 (27.19)	49.07 (32.25)	55.33 (30.04)	61.68 (33.61)	68.06 (32.25)	72.07 (29.66)
Savings As GDP	17.64 (14.38)	17.64 (16.34)	15.64 (12.41)	17.30 (12.21)	15.11 (12.95)	17.32 (14.80)	19.02 (16.11)
Trade as GDP	34.60 (20.09)	27.84 (21.18)	25.02 (16.90)	30.25 (19.45)	32.78 (16.13)	37.12 (23.53)	40.88 (20.94)

Control Variables

Levine and Renelt (1992) identify some the more robust predictors of economic growth, and the following three variables will be included as control variables in all models. First, the gross secondary enrollment rate is the standard way to account for human capital formation. This is taken from UNESCO Statistical Yearbooks (various

years). Second, savings should have a positive effect on growth rates as increased savings leads to capital accumulation that can be used to finance any number of projects, from infrastructure improvement to upgrades of capital equipment, which would increase GDP. Gross domestic savings is measured as percent of GDP and is taken from the World Bank's Development Indicators (World Bank 2011). Third, trade should have a positive effect on growth rates because it encourages production and leads to a diversification of the economy for the exporting country. Trade is measured as the value of goods and services exported as percentage of GDP and is taken from the World Bank's Development Indicators (World Bank 2011). Table 5.1 shows considerable increases in secondary enrollments from 1980 to 2005, while trade also trends upward. There is no particularly clear trend for savings.

Tables 5.2 shows correlations among variables for the 406 observations where data is available for the dichotomous variable and Table and 5.3 for the smaller set of 149 observations where percent of periods devoted to English is not zero. The first independent variable does not show a significant zero-order correlation with logged GDP, while the second is significantly positively correlated. There is a significant zero-order correlation between time spent on English where it is taught and trade, supporting the second mechanism discussed above. Beyond that, the correlations between the baseline variables and the independent variables are generally similar but not significant.

Table 5.2 Correlations between Variables for English Education and Growth (N = 406)

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
(1)						
(2)	0.056					
(3)	-0.689*	0.084*				
(4)	0.803*	-0.114*	-0.747*			
(5)	0.485*	0.013	-0.347*	0.466*		
(6)	0.370*	-0.005	-0.295*	0.348*	0.449*	

Correlations marked with an asterisk * differ from zero at p 0 <0.05

(1) Logged GDP
(2) English as Second Language (1 = yes, 0 = no)
(3) Pupil teacher ratio (primary)
(4) Secondary Enrollment (gross)
(5) Savings (as percent of GDP)
(6) Trade (as percent of GDP)

Table 5.3 Correlations between Variables for English Education and Growth, with only Observations Where Percent of Periods is Not Zero (N = 149)

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
(1)						
(2)	0.204*					
(3)	-0.689*	0.014				
(4)	0.803*	0.041	-0.747*			
(5)	0.485*	0.051	-0.347*	0.457*		
(6)	0.370*	0.188*	-0.295*	0.348*	0.449*	

Correlations marked with an asterisk * differ from zero at p 0 <0.05

(1) Logged GDP
(2) Percent of periods devoted to English language education
(3) Pupil teacher ratio (primary)
(4) Secondary Enrollment (gross)
(5) Savings (as percent of GDP)
(6) Trade (as percent of GDP)

Cross-Section Methods

An ordinary least squares (OLS) regression, with robust standard errors, is estimated with data for 2005 (n = 98) as this year offers the most complete cross-section. Here English education policies are simply measured as percent of periods devoted to English. Coding this way creates numerous zeros for those countries that do not teach English, and the resulting variable has a mean of 4.23% and the highest values clustered just under 20%.

Model 1 finds that this variable has a marginally significant positive effect on GDP per capita. Substantively, this suggests that a 1% increase in English language education raises GDP per capita by 2.6%. Control variables for secondary enrollments and savings are significant and positively signed as expected. Model 2 includes a variable for quality of schooling and finds that this control is insignificant in its effect on GDP per capita but that the effects of English language education are now larger and significant at a more conventional ($p<0.05$) level. While these models are able to distinguish between countries, they are unable to address how change within countries affects GDP per capita, and, like all cross-sectional methods, they are prone to period effects.

Pooled Time Series Methods

It is also possible to measure the effects of English language education over time. Pooling observations in this way makes it possible to control for unobserved time-invariant characteristics of individual countries. To do this, however, individual countries

Table 5.4: Ordinary Least Squares with Logged GDP per Capita for 2005, Robust Standard Errors (n = 98)

	1	2
Percent of periods (w/ 0% included)	.026 * (.015)	.047 ** (.018)
Pupil/ Teacher Ratio		-.007 (.008)
Secondary Enrollments	.042*** (.003)	.037*** (.005)
Savings	.034*** (.003)	.033*** (.005)
Trade	.029*** (.007)	.022** (.008)
	.005 (.005)	.007 (.005)
Constant	4.774*** (.248)	5.146*** (.698)
R ^{2}	.27	.27
N	98	98

* p < 0.10   ** p < 0.05   *** p < 0.01   (two-tailed tests)

must be observed more than once, and this raises the possibility that the observations for a single country at multiple time points may be correlated with each other. Where this is the case, as it is here,[41] heterogeneity bias arises, and standard regression techniques are inefficient. A common way to address this problem is to use a fixed effects model that

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41 Specifically the Breush-Pagan/Cook-Weisberg test for heteroskedasticity, using STATA 9.2's "hettest" command, rejects the hull hypotheses of constant variances (p > 0.006).

eliminates country- (or unit-) specific effects by subtracting the unit mean from the observed value for each time point. However, with the independent variable coded as in the cross-sectional analysis, a fixed effects model would lose the ability to distinguish between countries that began teaching a little English and countries that already taught English but increased the time spent on this subject by the same amount. To deal with this, two variables were created. The first, used in Models 3 and 4 below, is a dichotomy that distinguishes between where English is taught (1) and where it is not (0). The second, used in Models 5 through 8, is a continuous variable for the percent of instructional periods devoted to English. The variable for English education in Models 5 and 6 includes all possible observations and codes countries that do not teach English as zero (if this subject is not in the curriculum it takes up zero percent of instructional periods). Models 7 and 8 exclude the cases where English is not taught, so these models have fewer observations and include only those cases whose values on this variable are greater than zero.

Statistical tests[42] indicate that a fixed effects model would be preferable to a random effects model here; however, fixed effects models are inefficient when used to estimate the effects of variables that are slow to change over time. These variables show much more variation between countries than within them. Plumper and Troeger (2007) propose a fixed effects vector decomposition model to address situations in which independent variables are time-invariant or nearly so and suggest that where the ratio of variation between units to within units is 2.8 or greater, traditional fixed effects models

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42 Specifically, the Hausman test (as implemented by STATA 9.0's "hausman" command) rejects the null hypothesis that there are no differences between fixed and random effects ($p > 0.035$).

are inefficient. The ration of between- to within-unit variation is 2.61 for the dichotomy and 4.48 for the percent of time. For the sake of comparability, then, fixed effects vector decomposition will be used for both. This involves three stages. First, it estimates a traditional fixed effects model and finds country-specific error terms. Second, it splits the unit effects into explained and unexplained part by regressing the unit-specific term on those variables that do not change or show very little change—here, the main independent variables for English education—and saves the residuals. Finally, it regresses the dependent variable on (1) the time-invariant and time-varying variables and (2) the decomposed fixed effects (residuals) from the second stage. This procedure is used to estimate all models presented in Table 5.5.[43]

In the context of a fixed effects model—where country-specific effects are eliminated by subtracting the unit mean from each observation—the dichotomous variable employed in Models 3 and 4 can be interpreted as the effect of beginning to teach English. Model 3 shows that making this kind of change does not have a significant effect on GDP. Model 4 controls for educational quality and finds the same thing. Here, however, lower pupil-teacher ratios are positively associated with the dependent variable. This model can be interpreted to mean that decreasing the national average of students per teacher by one student would increase GDP per capita by 0.8%. The control variables are all significant and signed in the expected direction, and they should also be interpreted as the effect that a one-unit change relative to the national average would have on GDP per capita when multiplied by 100.

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[43] Specifically the "fevd" command in STATA 9.0 with the independent variables—the dichotomy of teaching or percent of periods—used as the invariant variables.

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Fixed Effects Vector Decomposition with Logged GDP per Capita as Dependent Variable (various sample sizes noted for each model)

	3	4	5	6	7	8
Teaches English	.076	.066				
	(.073)	(.072)				
Percent of periods (all cases)			.015**	.024**		
			(.007)	(.009)		
Percent of Periods, if taught (no 0s)					.123**	.121***
					(.044)	(.044)
Pupil/ Teacher Ratio		-.008**		-.015**		-.010**
		(.004)		(.005)		(.005)
Secondary Enrollments	.019***	.019***	.023***	.025***	.016***	.017***
	(.002)	(.002)	(.002)	(.002)	(.002)	(.003)
Savings	.007**	.007**	.003***	.004***	.006**	.006**
	(.003)	(.003)	(.003)	(.004)	(.003)	(.002)
Trade	.005**	.005**	.004***	.004***	.005**	.005**
	(.002)	(.002)	(.001)	(.001)	(.002)	(.002)
Constant	5.995***	6.316***	5.198***	5.96***	6.274***	6.461***
	(.109)	(.183)	(.102)	(.300)	(.127)	(.249)
R ^{2}	.34	.35	.29	.33	.35	.37
N	406	406	406	406	149	149

* $p < 0.10$ ** $p < 0.05$ *** $p < 0.01$ (two-tailed tests)

Models 5 and 6 test the effects of teaching English with a continuous variable for percent of periods devoted to this subject. Model 5 finds a positive effect of devoting more time to teaching English. Model 6 finds the same thing while controlling for quality

of education. These findings indicate that teaching more English has a positive effect on growth, although a substantive interpretation of the coefficient suggests the effects are very small. However, both of these include a large number of zeros for the main independent variable and Models 7 and 8 test the effects of changes in time spent on English only among those countries that do teach it. Both find a significant positive effect, and the coefficient is much larger than in Models 5 and 6. These models do not necessarily include the same countries so care should be taken in assigning substantive meaning to the differences in coefficients, but the inclusion of zeros for countries that do not teach English clearly biased estimates of the effects of teaching English downward. The coefficients in Models 7 and 8 are relatively large—indicating that a 1% increase in English instruction should mean increase in GDP by about 12%—the standard deviation for within-unit variation here is 1.27%, so very few countries have increases of more than 1–2%. Model 8 controls for educational quality and, again, finds that lowering pupil-teacher ratios is significantly associated with increased GDP.[44] The control variables are all significantly associated with GDP per capita and in the direction expected.

Given the basic proposition here- that English language skills can be understood as human capital- there may be an interaction between the language teaching variables and secondary enrollments, which is the usual measure of human capital formation. Additional models (not shown here) with an interaction term between English language

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[44] Parallel analyses used secondary pupil-teacher ratios instead of primary ratios because second language education is more common in secondary school. In this smaller sample (n = 330, instead of 406), secondary pupil-teacher ratios do have a marginally significant (p < 0.10) effect on GDP, as one would expect, while the effect is insignificant in those countries with data on percent of teaching periods (N = 91, instead of 140). In no analyses were the effects of the main independent variables different from those presented here.

education and secondary enrollments find the coefficient for the interaction terms is positively signed but not significant.[45] Tests for outliers indicated two potentially influential cases[46] but excluding them did not substantively affect the results.

CONCLUSION

These findings indicate that the amount of English taught is positively related to GDP per capita, supporting the conceptualization of English language skills as human capital. The cross-sectional models are able to address differences between countries and show that countries that teach more English have higher GDP per capita. Panel models control for unobserved and lasting differences between countries and show, interestingly, that moving to include English where it was not included previously has no effect on growth. Examining some of the cases that began teaching English sheds lights on the dynamics at play. On the one hand, countries that do not teach English throughout the period have well-established histories of teaching other languages; these are generally former French colonies. On the other hand, there are a few countries that switched to teaching English during this period. For example, Rwanda and Cambodia began teaching English in the aftermath of brutal civil wars when educational systems needed to be rebuilt. China and Vietnam, as other examples, began teaching English as part of a multifaceted policy of opening to the world. In all of these cases, there is evidence that

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[45] Specifically, when the interaction is between the dummy variable for teaches English or not and secondary enrollments the coefficient was .003 although failed to achieve significance at the relaxed level of $p < 0.10$ (t=.110). This suggests that those school systems that teach English accumulate human capital (as measured by enrollments) at a higher rate than those that do not, in line with the theory here. The interaction between percent of period (with no zeros) and secondary enrollments was positive but indistinguishable from zero.

[46] Saudi Arabia and Angola for 1980.

instructional quality is low and, moreover, slow to increase when future teachers must be trained under less-than-ideal conditions (Fernando 1996; Lam 2002.

The results show that increasing time allocated to English where it is taught does facilitate development. Countries that increased the percent of periods devoted to English did so by beginning English instruction in earlier grade levels, most commonly by extending instruction from secondary into primary school grades. There are a diverse group of countries that have increased English education in this way at some point during the period understudy. There are former Anglophone colonies in the Pacific (like Malaysia and the Philippines) Africa (like Zambia and Zimbabwe) that have a history of teaching English. There are also countries in the Middle East (like Kuwait and the United Arab Emirates) and Europe (like Norway and Austria) that have fairly well funded school systems. In both of these groups established patterns of teaching English or resources mean that adequately trained teachers can be produced or acquired. At the same time, increased time spent on English may signal to students and parents that the subject is important, and this, in turn, may motivate additional increases in time spent studying this subject out of school (Baker et al. 2004).

These findings also indicate the role of formal education in the creation of human capital. If human capital is conceptualized in terms of specific skills, then English language education appears to be a skill that can be created when instruction is delivered in sufficient quantity. Interestingly, the positive effect of English on GDP was observed while controlling for secondary enrollments, the more common way to measure "gross" human capital formation, further supporting the idea that English language education

creates a specific skill and that this variable is not a proxy for some more general outcome of schooling. Given that other studies have also found links between math and science and economic growth, disaggregating national curricula and conducting further cross-national research may shed light on how the content of schooling relates to national level outcomes.

While these findings provide some support for claims that teaching English leads to growth, policy implications are ambiguous. First, these results are not able to shed light on how many English speakers or what level of proficiency is needed to realize these benefits. Coordinating flows of large volumes of capital may not require more than a handful of English speakers. Even if large sectors of the population do develop English skills, it may also be that the impact of these skills varies by sector as the level of skill needed to attract tourism revenue, for example, is probably lower than the level needed to attract call centers and back-end processing. Second, it may be that English skills are, or may soon become, widely enough distributed that they are not so much of an advantage but a basic skill (Prendergast 2008).

In summary, then, these findings support the idea that teaching English has some benefits. But for at least a few reasons, these results alone cannot provide strong justification for the idea that all school systems should being spending much more time teaching English.

Table 5.6: Countries included in Chapter Five

All countries are included in the 120 countries for which it was possible to determine what language was taught (for 406 country-year observations in multivariate analyses). The 43 countries marked with an asterisk are the subset for which it was possible to how much English was taught (for 149 country-year observations in multivariate analyses).

Albania	Dem. Rep. of Congo	Lesotho *	S. Korea *
Algeria	Denmark *	Lithuania	Saudi Arabia
Angola	Dominican Rep.	Macedonia	Senegal
Argentina	Ecuador	Madagascar *	Seychelles
Austria *	Egypt *	Malawi *	Sierra Leon
Bahrain *	El Salvador	Malaysia *	Slovakia
Bangladesh *	Estonia	Maldives	Slovenia
Belarus	Finland *	Malta	Sri Lanka *
Belize	France	Mauritania	Sudan *
Benin	Georgia	Mauritius *	Swaziland
Bolivia *	Ghana *	Mexico	Sweden *
Botswana	Greece *	Mongolia	Syria
Brazil	Guatemala *	Morocco	Tanzania *
Brunei *	Guinea	Mozambique	Thailand
Bulgaria	Haiti	Namibia *	The Gambia
Burkina Faso *	Honduras	Nepal *	Togo
Burundi	Hungary	Netherlands	Tunisia *
Cambodia	India	Nicaragua	Turkey
Cape Verde	Indonesia *	Niger	Uganda *
Central African Rep.	Iran	Pakistan	Ukraine
Chad	Israel	Papua New Guinea	United Arab Emirates *
Chile *	Italy	Paraguay	Uruguay *
China *	Japan *	Peru	Uzbekistan
Colombia	Jordan *	Philippines *	Venezuela
Comoros	Kazakhstan	Poland	Vietnam
Congo *	Kuwait *	Portugal	Yemen *
Croatia	Kyrgyzstan *	Qatar *	Zambia *
Cuba *	Laos	Romania	Zimbabwe *
Cyprus *	Latvia	Russia	
Czech Republic	Lebanon	Rwanda *	

Chapter Six:

Conclusion

This dissertation placed language education policies in a long-term comparative perspective and used rich empirical data to treat contemporary language educational policies as a window on larger processes.

In the larger historical and comparative perspective we saw that what languages became institutionalized in national school systems was largely a result of inequalities between societies. The insertion of European languages into the curricula of every national school system through the expansion of the European world-system is clear evidence of this. The relative power of European societies allowed them to, ultimately, replace indigenous languages in most of North and South America as well as Australia and New Zealand. The English language figured prominently in these analyses because of two, successive, English-speaking hegemons; while there is a certain degree of conjuncture to this, hegemony in the world-system hinges in part on the development of new productive technology. The fact that the blueprints for both the auto loom and the personal computer (to take two archetypal inventions) were in English has had much to do with the place of English at the global level. Languages of other current of former core powers- Spanish, French and Portuguese- are among the small number of languages studied in more than one country.

Where Europeans did not marginalize and replace indigenous languages, however, the spread of the interstate system generally meant that some language needed to be selected to represent the "authentic" cultural core of a nation. However, in many

places, the selection of a national language is related to inequality within society. On the one hand, almost none of the 80% or so of the world's languages with less than 100,000 speakers are included in the curricula anywhere (Lewis, Simons and Fennig 2013). The groups that speak these languages are generally marginalized within their own country and must learn both nationally and globally prominent languages to participate in schooling, the economy or most any other area of life removed from the extended family or village. On the other hand, in some cases official languages are "foreign" languages brought by colonization and then retained because the selection of an indigenous language to take on such functions was so problematic that it was avoided. This happened in most of Africa and a few Asian countries as well. Without this longer historical and comparative perspective it would be difficult to understand why, for example, so many African schools use French or why virtually all Indians study English.

At the same time, data on what languages are taught and how much has meant it was possible to use variations in language education policies to shed light on other areas of substantive interest. While this research was not the first attempt to disaggregate the curriculum in this way, few empirical analyses do this in a cross-national framework. It seems that some of the ambiguity of the effects of education at the macro level may be because measures such as enrollments or literacy rates are unable to account for the fact that schooling is not an undifferentiated process.

First, with regards to inequality we saw that where schooling is conducted in languages most students do not understand at the beginning of school inequality is much higher. There is a certain irony in that using colonial languages as the medium of

instruction- presumably the highest level of exposure possible- means that many students are not able to complete school, which ultimately precludes their ability to study these languages in higher grades. While it is not entirely clear if this outcome is an unintended consequence or, perhaps, an intentional attempt to bar progress through school for some students, it does point out that simply expanding enrollments- as most developing countries did during the period understudy- will not suffice to reduce inequality. The larger historical and social contexts in which schooling is embedded make a difference.

Second, the relationship between human capital formation and national level economic development was investigated. Time devoted to English language education was associated with higher levels of development, and the argument that this language could be thought of as a kind of human capital was largely supported. This suggests that other subjects may create useful human capital and, by extension, that not all schooling activities contribute to the accumulation of development facilitating skills at the same rate. This is not to say that those subjects that do not promote economic development are worthless and should be removed from the curricula. The argument is, rather, that some of the ambiguity about how schooling relates to developmental processes could be resolved if attention was paid to the contents of schooling.

Finally, the implementation of second language education policies was taken as a way to investigate the spread of global norms. While all countries did include a second language it was those that spoke less widely spoken languages and younger countries which were most likely to make it mandatory for students to study these languages. Overall levels of global integration were significant and this suggests that the network of

IGOs, while not totally unimportant, is itself more of a manifestation of increasing global integration and not, primarily, a driver of that integration.

The perspective on language education developed here, then, shows not only that current policies were shaped by the historical development of the world-system but also that these policies explain some amount of variation in inequality within nations and economic development at present.

Appendix: Data

The data on language education was taken form the International Bureau of Education's (IBE) National Development of Education reports and World Data on Education. Many of these reports are available on the IBE website, [47] however digitization of their archive is not complete and I traveled to the IBE's headquarters in Geneva during the summer of 2012 to secure access to many of these documents.

These reports contained a variety of information about national school systems. Of particular interest were curricular timetables (see Figure 1.1) and these served as the primary data source, although the text of reports was also used. These tables (and other parts of the report) were generally easy to understand and, when sufficiently complete, posed few problems for coding because these documents were meant to convey information to others. At the same time, the curricula spelled out in these documents may be better thought of as intentions which do not completely correspond to what actually happens in classrooms. That said, the research questions here concern how features of school systems relate to national level characteristics; neither the student nor the classroom is the unit of analysis.

Coding focused on creating six main variables. The first two are what languages are taught as first and second languages. This was a nominal category in which I matched a particular language (Swahili, English, etc) to a particular curricular subject. It most cases it was very clear what language was taught. There was occasionally some difficulty

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[47] http://www.ibe.unesco.org/en/services/online-materials/databases.html

identifying the second language. In most cases this was because there was not a single language but students and schools had some degree of choice in what language or languages to study or teach and I coded these as an unspecific "foreign language."

The other variables are measures of emphasis given to particular curricular subjects. Two are the grade level in which instruction in the first and second language began. For the first language this was invariably the first grade, but for the second language this may have been anywhere from the first to the 12th or 13th grade. (This variable, plus a variable on the number of mandatory or scheduled years, made it possible to determine how many years students must or could study that language.) The other two variables were percent of periods devoted to the first or second language as a subject. I sum all periods across the primary and secondary curriculum to find the denominator. (Curricular timetables were most often expressed number of periods per week, so it was often necessary to multiply those figures by the number of weeks to find yearly totals and then sum across grade levels.) This allowed me to measure time devoted to these subjects (regardless of their contents) as well as match this up to a particular language.

I was able to determine the actual amount of time (in hours and minutes) devoted to first and second languages for about 20% of cases. Not all reports contained this level of detail and even when they did it was not always possible to calculate this figure. That said, the correlations between time and percent of periods spent on a language was high for both first (.79) and second (.85) languages.

It should be noted that the year of a report and the data time point it was used to code were often not identical. Reporting was most frequent in years when IBE hosted a

conference (typically every second or third year) and most reports explicitly stated they covered the prior two or three years. There were some cases where one of the years for which I was coding data was not covered by any specific report. In many of these cases (about 7% of all data points) I used a report from an adjacent year if prior and subsequent reports did not indicate any substantial change in the structure or content of the education system. Given the overall stability in national curricula, it is difficult to see how this strategy for dealing with missing data would introduce any systematic bias.

WORKS CITED

Akinnaso, Niyi F. 1991. "On the Mother Tongue Education Policy in Nigeria." *Educational Review* 43(1):89-106.

—. 1993. "Policy and Experiment in Mother Tongue Literacy in Nigeria." *International Review of Education* 39(4):255-85.

Alderson, Arthur S., and Francois Nielsen. 2002. "Globalization and the Great U-Turn: Income Inequality Trends in 16 OECD Countries." *American Journal of Sociology* 107:1244-99.

Alderson, Arthur S., and Francois Nielsen. 1999. "Income Inequality, Development, and Dependence: A Reconsideration." *American Sociological Review* 64(4):606-31.

Alidou, Hassan, Aliou Boly, Birgit Brock-Utne, Yaya Satina Diallo, Kathleen Heugh, and Ekkehard H. Wolff. 2006. *Optimizing Learning and Education in Africa: The Language Factor*. Libreville, Gabon: Association of the Development of Education in Africa.

Allender, Tim. 2007. "How the State Made and Unmade Education in the Raj, 1800-1919." in *Transformations in Schooling: Historical and Comparitve Perspectives*, edited by Kim Tolly. New York: Palgrave McMillan.

Altbach, Philip G. 1991. "The Distribution of Knowledge in the Third World: A Case Study in Neolcolonialism." in *Education and the Colonial Experience*, edited by Philip G. Altbach and Gail P. Kelly. New York: Advent Books, Inc.

Altbach, Philip G., and Gail P. Kelly (Eds.). 1991. *Education and the Colonial Experience*. New York: Advent Books.

Ammon, Ulrich. 2003. "The International Standing of the German Language." in *Languages in a Globalising World*, edited by Jacques Maurais and Michael. A Morris. Cambridge, UK: Cambridge Univeristy Press.

Anderson, Benedict. 1983. *Imagined Communities*. New York: Verso.

Archer, Margaret. 1979. *Social Origins of Educational Systems*. Beberly Hills, CA: Sage Publications.

Azevedo, Mario. 1980. "A Century of Colonial Education in Mozambique." in *Independence without Freedom: The Political Economy of Colonial Education in Southern Africa*, edited by Agrippah T. Mugomba and Mougo Nyaggah. Santa Barbar, CA: ABC-Clio.

Bakalla, Muhammad Hasan. 1984. *Arabic Culture Through its Language and Literature*. London: Kegan Paul International

Baker, David P., Rodrigo Fabrega, Claudia Galindo, and Jacob Mishook. 2004. "Instructional Time and National Achivement: Cross-National Evidence." *Prospects* 34(2):311-34.

Baker, David P., and Gerald K LeTendre. 2005. *National Differences, Global Similarities*. Stanford, CA: Standford Univeristy Press.

Baldacci, Emanuele, Benedict Clements, Sanjeev Gupta, and Qiang Cui. 2008. "Social Spending, Human Capital, and Growth in Developing Countries." *World Development* 36(8):1317-41.

Baldacci, Emanuele, Maria-Teresa Guin-Sui, and Luiz Mello. 2003. "More on the Effectiveness of Public Spending on Health Care and Education." *Journal of International Development* 15(6).

Baltagi, Badi H., and Ping X. Wu. 1999. "Unequally Spaced Panel Data Regression with AR(1) Disturbances." *Econometric Theory* 814-823(15):6.

Bamgbose, Ayo. 2000. "Language Planning in West Africa." *International Journal of the Sociology of Language* 141(1):101-17.

Barber, Charles, Joan C. Beal, and Philip A. Shaw. 2009. *The English Language: A Historical Introduction (Second Edition)*. Cambridge, UK: Cambridge University Press.

Barnett, George A, and Joseph G.T. Salisbury. 1996. "Communication and Globalization: A Longitudinal Analysis of the International Telecommunication Network." *Journal of World-Systems Research* 2(16).

Barro, Robert J. 1991. "Economic Growth in a Cross Section of Countries." *Quarterly Journal of Economics* 106(2):407-43.

Barro, Robert J., and Jong-Wha Lee. 1993. "International Comparisons of Educational Attainment." *Journal of Monetary Economics* 32(3):363-94.

Becker, Gary S. 1975. *Human Capital*: Chicago.

Benavot, Aaron. 1992a. "Curricular Content, Educational Expansion, and Economic Growth." *Comparative Education Review* 32(2):150-74.

—. 1992b. "Educational Expansion and Economic Growth." in *The Political Construction of Education: The State, School Expansion, and Economic Change*, edited by Bruce Fuller and Richard Rubinson. New York: Praeger.

—. 2004. *A Global Study of Intended Instructional Time and Official School Curricula, 1980-2000*. Background Paper prepared for Education of All Global Monitoring Report 2005 UNESCO.

Benavot, Aaron, and Limor Gad. 2004. "Actual Instructional Time in African Primary Schools: Factors that Reduce School Quality in Developing Countries." *Prospects* 34(3):291-310.

Benavot, Aaron, and Phyllis Riddle. 1988. "The Expansion of Primary Education, 1870-1940: Trends and Issues." *Sociology of Educaiton* 61(3):191-210.

Benavot, Aaron, Yun-Kyung Cha, David H. Kamens, John W. Meyer, and Suk-Ying Wong. 1991. "Knowledge for the Masses: World Models and National Curricual, 1920-1986." *American Sociological Review* 56(1):85-100.

Benhabib, Jess, and Mark M. Spiegel. 1994. "The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data." *Journal of Monetary Economics* 34(2):143-73.

Benrabah, Mohamed. 2007. "Language Maintenance and Spread: French in Algeria." *International Journal of Francophone Studies* 10(1&2):193-215.

Berstein, Basil. 1977. "Social Class, Language and Socialisation." in *Power and Ideology in Education*, edited by Jerome Karabel and A.H. Halsey. New York: Oxford Univsersity Press.

Bing, Wu Kin. 2008. "Education and Inequality in the Developing World." in *Inequality in Education: Comparative and International Perspectives*, edited by Donald B Holsinger and W. James Jacob. Hong Kong: Springer and Compartive Education Research Center, The University of Hong Kong.

Birmingham, David. 1999. *Portugal and Africa*. New York: MacMillian.

Blossfeld, Hans-Peter, and Yossi Shavit. 1993. "Persisting Barriers: Changes in Educational Opportunities in Thirteen Countries." in *Persistent Inequality: Changing Educational Attainment in Thirteen Countries*, edited by Yossi Shavit and Hans-Peter Blossfield. Boulder, CO: Westview Press.

Blyth, Robert J. 2003. *The Empire of the Raj: India, Eastern Africa and the Middle East*. New York: Parlgrave Macmillian.

Boisso, Dale, and Michael Ferrantino. 1997. "Economic Distance, Cultural Distance, and Openness in International Trade: Emperical Puzzles." *Journal of Economic Integration* 12(4):456-84.

Bokamba, Eyamba G. 2008. "D. R. Congo: Language and 'Authentic Nationalism'." in *Language and National Identity in Africa*, edited by Adrew Simpson. Oxford, UK: Oxford Universtity Press.

Boli, John, Francisco O. Ramirez, and John W. Meyer. 1985. "Explaining the Origins of Expansion of Mass Education." *Comparative Education Review* 29(2):145-70.

Boli, John, and Franciso O. Ramirez. 1986. "World Culture and the Institutional Development of Mass Education." in *Handbook of Theory and Research for the Sociology of Education*, edited by John G. Richardson. Westport, Conn: Greenwood Press.

Boli, John, and George M. Thomas. 1997. "World Culture in the World Polity: A Centry of International Non-Governmental Organization." *American Sociological Review* 62(2):171-90.

—. 1999. "INGOs and the Organization of World Culture." in *Constructing World Culture: International Nongovermental Organizations Since 1875*, edited by John Boli and George M. Thomas. Stanford, CA: Stanford University Press.

Bollen, Kenneth A., and Stephen J. Appold. 1993. "National Structure and the Global System." *American Sociological Review* 58(2):283-301.

Bose, Niloy, M. Emranual Haque, and Denise R. Osborn. 2007. "Public Expenditures and Economic Growth: A Disagregated Analysis for Developing Countries." *The Manchester School* 75(5):533-56.

Botting, Geoff. 2010. "Rakuten's English-only Policy Endures Close Media Scrutin." in *Japan Times*. Tokoyo.

Bourdieu, Pierre. 1991. *Language and Symbolic Power*. Cambridge, MA: Harvard Universtiy Press.

Boxer, C. R. 1965. *The Dutch Seaborne Empire: 1600-1800*. New York: Alfred A Knopf.

Bray, Mark. 1997. "Education and Decolonization: Comparative Perspectives on Change and Continuity." in *International Handbook of Education and Development: Preparing Schools, Students and Nations for the Twenty-First Century*, edited by William K Cummings and Noel F. McGinn. New York: Pergamon.

Brock-Utne, Birgit. 2001. "Education for All - in Whose Language?" *Oxford Review of Education* 27(1):115-34.

—. 2008. "Language and Democracy in Africa." in *Inequality in Education: Comparative and International Perspectives*, edited by Donald B Holsinger and W. James Jacob. Hong Kong: Springer and Compartive Education Research Center, The University of Hong Kong.

Brooke, James. 2005. "For Mongolians, E is for English, F is for Future." *New York times* Feburary 15.

Brutt-Griffier. 2002. *World English: A Study of its Development*. Buffalo, NY: Multilingual Matters LTD.

Buchmann, Claudia, and Emily Hannum. 2001. "Educaiton and Stratification in Developing Countries: A Review of Theories and Research." *Annual Review of Sociology* 27:77-102.

Burkholder, Mark A., and Lyman L. Johnson. 1990. *Colonial Latin America*. Oxford, UK: Oxford University Press.

Calarco, Jessica McCrory. 2011. ""I Need Help!" Social Class and Children's Help Seeking in Elementary School." *American Sociological Review* 76(6):862-82.

Calvet, Louis-Jean. 2006. *Towards an Ecology of World Languages*. Malden, MA: Polity Press.

Cha, Yun-Kyung. 1991. "Effects for the Global System on Language Instruction, 1850-1986." *Sociology of Educaiton* 64(1):19-32.

—. 2006. "The Spread of English Language Instruction in the Primary School." in *School Knowledge in Comparative and Historical Perspective: Changing Curricula in Primary and Secondary Education*, edited by A. Benavot and Cecilia Braslavsky. Hong Kong: Springer.

—. 2007. "The Spread of English Language Instruction in the Primary School." in *School Knowledge ih Comparative and Historical Perspective: Changing Curricula in Primary and Secondary Education*, edited by Aaron Benvot and Cecilia Braslavsky. London: Springer.

—. 2011. "Educating Supranational Citizens: The Incorporation of English Language Education into Curriculum Policies." *American Journal of Educaiton* 117(2):183-209.

Chabbott, Colette, and Franciso O. Ramirez. 2000. "Development and Education." in *Handbook of the Sociology of Education*, edited by Maureen T. Hallinan. New York: Plenum Publishers.

Chaudenson, Robert. 2003. "Geolinguistics, Geopolitics, Geostrategy: The case of French." in *Languages in a Globalizing World*, edited by Jacques Maurais and Michael. A Morris. Cambridge: Cambridge, UK.

Chiswick, Barry R., and Paul W. Miller. 1995. "The Endogeneity between Language and Earnings: International Analyses." *Journal of Labor Economics* 13(2):246-88.

Clayton, Thomas. 2002. "Language Choice in a Nation Under Transistion: The Struggle Between English and French in Cambodia." *Language Policy* 1(1):3-25.

Coburn, Cynthia. 2004. "Beyond Decoupling: Rethinking the Relationshpi between the Institutional Environment and the Classroom." *Sociology of Education* 77(3):211-44.

Coe, David T, and Ellhanan Helpman. 1995. "International R&D Spillovers." *European Economic Review* 39(5):859-87.

Coe, David T, Ellhanan Helpman, and Alexander W. Hoffmaister. 1997. "North-South R&D Spillovers." *The Economic Journal* 107(440):134-39.

Coyne, Gary. 2012. "Language in the World-System." in *Routledge Handbook of World-Systems Analysis*, edited by Salvator J. Babones and Christopher Chase-Dunn. New York: Routledge.

Craig, John. 1981. "The Expansion of Education." *Review of Educational Research* 9(1):151-210.

Crystal, David. 2003. *English as a Global Language*. Cambridge, UK: Cambridge Univeristy Press.

David, Jacques. 1975. *French in Africa: A Guide to the Teaching of French as a Foreign Language*. Paris: United Nations Educational, Scientific and Cultural Organization.

de Klerk, Vivian. 1999. "Black South African English: Where to From Here?" *World Englishes* 18(3):311-24.

de Swaan, Abram. 2001. *Words of the World*. Cambridge, UK: Polity.

Diab, Rual L. 2005. "University Student's Beliefs about Learning English and French in Lebanon." *System* 34(1):80-96.

Djite, Paulin G. 2000. "Language Planning in Cote d'Ivorie." *Current Issues in Language Planning* 1(1):11-46.

Drori, Gili S., John W. Meyer, Franciso O. Ramirez, and Evan Schafer. 2003. *Science in the Modern World Polity*. Stanford, CA: Stanford University Press.

Eckel, Peter D. 2008. "Mission Diversity and the Tension between Prestige and Effectiveness: An Overview of US Higher Education." *Higher Education Policy* 21:175-92.

EducationFirst. 2011. *EF English Porficiency Index*. London.

Fabian, Johannes. 1986. *Language and Colonial Power: The Appropriation of Swahili in the Former Belgian Congo 1880-1938*. Cambridge, UK: Cambridge University Press.

Fernando, Chitra. 1996. "The post-Imperial Status of English in Sri Lanka 1940-1990: From First to Second Language." in *Post Imperial English: Status Change in Former British and American Colonies, 1940-1990*, edited by Joshua Fishman, Andrew W. Conrad, and Alma Rubal-Lopez. Berlin: Mouton de Gruyter.

Fiala, Robert. 2006. "Educational ideology and the School Curriculum." in *School Knowledge in Comparative and Historical Perspective: Changing Curricula in Primary and Secondary Education*, edited by Aaron Benavot and Cecilia Braslavsky. Hong Kong: Springer.

Fiala, Robert, and Audri Gordon Lanford. 1987. "Educational Ideology and the World Education Revolution, 1950-1970." *Comparative Education Review* 31(3):315-32.

Fieldhouse, D. K. 1982. *The Colonial Empires: A Comparative Survey from the Eighteenth Century, Second Edition*. New York: Dell Publishing.

Fink, Carsten, Aaditya Mattoo, and Ileana Cristina Neagu. 2005. "Assessing the Impact of Communication Costs on International Trade." *Journal of International Economics* 67(2):428-45.

Fishman, Joshua A., Andrew W. Conrad, and Alma Rubal-Lopez. 1996. *Post Imperial English: Status Change in Former British and American Colonies, 1940-1990*. Berlin: Mouton de Gruyter.

Fodor, Ference, and Sandrine Peluau. 2003. "Langauge and Geostrategy in Eastern and Central Europe: Assessmetn and Perspectives." in *Languages in a Gloalising World*, edited by Jacques Maurais and Michael. A Morris. Cambridge, UK: Cambridge University Press.

Food and Agricurtual Organization of the United Nations. 2009. "FAOSTAT Online Statistical Service." http://faostat.fao.org: FAOUN: Rome.

Ford, Donald. 1988. *The Twain Shall Meet: The Current Study of English in China*. New York: Wiley.

Foroutan, Faezeh, and Lant Pritchett. 1993. "Intra-Sub-Saharan African Trade: Is It Too Little?" *Journal of African Economics* 2:74-105.

Foster, Philip. 1980. "Education and Inequality in Sub-Saharan Africa." *The Journal of Modern African Studies* 18(2):201-36.

—. 1985. "Africa." in *The School and the University: An International Perspective*, edited by Burton R. Clark. Berkeley, CA: University of California Press.

Frankel, Jeffery A. 1997. *Regional Trading Blocks in the World Economic System*. Washington, DC: Institute for International Economics.

Frees, Edward W. 2004. *Longitudinal and Panel Data: Analysis and Applications in the Social Sciences*. Cambridge, UK: Cambridge University Press.

Gaily, Harry A. 1965. *A History of the Gambia*. New York: Frederick A. Praeger.

Gamoran, Adam, and Robert Dreeben. 1986. "Coupling and Control in Educational Organizations." *Administrative Science Quarterly* 31(4):612-32.

Gann, Lewis H., and Arthur J. Knoll (Eds.). 1987. *Germans in the Tropics: Essays in German Colonial History*. Westport Conn: Greenwood Press.

Gardt, Andreas, and Bernd Huppauf (Eds.). 2004. *Globalization and the Future of German*. Berlin: Mouton de Gruyter.

Garnier, Maurice, Jerald Hage, and Bruce Fuller. 1989. "The Strong State, Social Class, and Controlled School Expansion in France, 1881-1975." *American Journal of Sociology* 95(2): 1989.

Garnier, Maurice, and Evan Schafer. 2006. "Educational Model and Expansion of Enrollments in Sub-Saharan Africa." *Sociology of Educaiton* 79(2):153-76.

Go, Julian. 2001. *Patterns of Empire: The British and American Empires, 1688 to the Present*. Cambridge, UK: Cambridge Univeristy Press.

Gottlieb, Nanette. 2007. "Japan." in *Language and National Identity in Asia*, edited by Andrew Simpson. Oxford, UK: Oxford University Press.

Grant, Nigel. 1983. "Lingustic and Ethnic Minorities in the USSR: Educational Policies and Developments." in *Soviet Education in the 1980s*, edited by J. J. Tomiak. New York: St. Martin's Press.

Grimal, Henri. 1965. *Decolonization: The British, French, Dutch and Belgain Empires 1919-1963*. London: Routledge & Kegan Paul.

Grin, Francoiz. 1996. "The Economics of Language: Survey, Assesment, and Prospects." *International Journal of the Sociology of Language* 121(1):17-44.

Guellec, Dominque, and Bruno van Pottelsberghe de la Porreri. 2001. "The Internationalisation of Technology with Patent Data." *Research Policy* 31(4):1253-66.

Guo, Rongxing. 2007. "Linguistic and Religious Influences on Foreign Trade: Evidence from East Asia." *Asian Economic Journal* 21(1):101-21.

Hage, Jerald, and Maurice Garnier. 1990. "Social Class, The Hesitant State, and the Expansion of Secondary Schools in Britian, 1970-1975." in *Research in Sociology of Education and Socialization*, edited by Ronald G. Corwin. Greenwich, Conn: JAI Press Inc.

Hallett, Tim. 2010. "The Myth Incarnate: Recoupling Processes, Turmoil, and Inhabited Institutions in an Urban Elementary School." *American Sociological Review* 75(1):52-74.

Hamel, Rainer Enrique. 2007. "Dominance of English in the International Scientific Periodical Literature and the Future of Language Use in Science." *AILA Review* 20(1):53-71.

Hanushek, Eric A., and Dongwook Kim. 1995. *Schooling, Labor Force Quality, and Economic Growth*: National Bureau of Economic Research, Working Paper 5339.

Hassa, Samira. 2012. "Regulating and Negotiating Lingustic Diversity: top-down and bottom-up language planning in the Moroccan city"." *Current Issues in Language Planning* 13(3):207-23.

Havrylyshyn, Oleh, and Lant Pritchett. 1991. "European Trade Patterns After the Transition." *Policy, Research and External Affairs* Working Paper Series, 74:World Bank. Washington DC.

Heggoy, Alf Andrew. 1991. "Colonial Education in Algeria: Assimilation and Reaction." in *Education and the Colonial Experience*, edited by Philip G. Altbach and Gail P. Kelly. New York: Advent Books, Inc.

Held, David, Anthony McGrew, David Goldblatt, and Jonathan Perraton. 1999. *Global Transformations: Politics, Economy and Culture*. Stanford, CA: Stanford University Press.

Henige, David. 1970. *Colonial Governors from the Fifteenth Century to the Present*. Madison, WI: University of Wisconsin Press.

Hidalgo, Margarita, Barbara Cifuentes, and Jose A Flores. 1996. "The Position of English in Mexico." in *Post Imperial English: Status Change in Former British and American Colonies, 1950-1990*, edited by Joshua Fishman, Andrew W. Conrad, and Alma Rubal-Lopez. Berlin: Mouton de Gruyter.

Hilgendorf, Eric. 2003. "Islamic Education: History and Tendency." *Peaobody Journal of Education* 78(2):63-75.
Holmes, B. 1967. "British Imperial Policy and the Mission Schools." in *Educational Policy and the Mission Schools*, edited by B Holmes. London: Routledge and Kegan Paul.

Holsinger, Donald B, and W. James Jacob. 2008. "Education Inequality and Academic Achievement." in *inequality in Education: Comparative and International Perspectives*, edited by Donald B Holsinger and W. James Jacob. Hong Kong: Springer and Comparative Education Research Center, The University of Hong Kong.

Hourani, Albert. 1991. *A History of the Arab Peoples*. Cambridge MA: Harvard University Press.

Hugill, Peter J. 1999. *Global Communications Since 1844*. Baltimore: MA: Johns Hopkins Press.

Isaacman, Allen, and Barbara Isaacman. 1983. *Mozambique: From Colonialims and Revolution, 1900-1982*. Boulder, CO: Westview Press.

Jacoby, Susan. 1974. *Inside Soviet Schools*. New York: Hill and Wang.

Jacob, W. James, and Donald B Holsinger. 2008. "Inequality in Education." in *Inequality in Educaiton: Comparative and International Perspectives*, edited by Donald B Holsinger and W. James Jacob. Hong Kong: Springer and Compartive Education Research Center, The University of Hong Kong.

James, Wendy. 2008. "Sudan: Majorities, Minorities and Language Interactions." in *Languages and National Identity in Africa*, edited by Andrew Simpson. Oxford, UK: Oxford University Press.

Judson, Ruth. 1998. "Economic Growth and Investment in Education: How Allocation Matters." *Journal of Economic Growth* 3(4):337-59.

Kachru, Braj B. 1984. "The Alchemy of English: Social and Functional Power of Non-Native Varieties." in *Language and Power*, edited by Murial Schultz Cheris Kramarae, William M. O'Barr. Beverly Hills, CA: Sage Publication.

Kamens, David H., John W. Meyer, and Aaron Benavot. 1996. "Worldwide Patterns in Academic Secondary Education Curricula." *Comparative Education Review* 40(2):116-38.

Kamwangamalu, Nkonko M. 1997. "The Colonial Legacy and Language Planning in Sub-Saharan Africa: The Case of Zaire." *Applied Lingustics* 18(1):69-85.

Kayambazinthu, Edrinnie. 1998. "The Language Planning Situation in Malawi." *Journal of Multilingual and Multicultural Development* 19(5&6):369-439.

Keller, Wolfgang. 2001. "The Geography and Channels of Diffusion at the World's Technological Frontier." *HHWA Discussion Paper* 123.

Kelly, Gail P. 1991. "Colonialism, Indigenous Society, and School Practices: French West Africa and Indochina, 1918-1938." in *Education and the Colonial Experience*, edited by Philip G Altbach and Gail P Kelly. New York: Advent Books, Inc.

Kelly, Gail Paradise. 2000. *French Colonial Education: Essays on Vietnam and West Afrcia*. New York: ASM Press.

Kentor, Jeffery. 2000. *Capital and Coercion: The Economic and Military Processes that Have Shaped the World Economy, 1800- 1990*. New York: Routledge.

Khasnor, Johan. 1984. *The Emergene of the Modern Nalay Administrative Elite*. Singapore: Oxford Univeristy Press.

Kim, Young Hum. 1981. *American Frontier Activities in Asia: US-Asian Relations in the Twentieth Century*. Chicago: Nelson-Hall.

Kliebard, Herbert M. 1992. "Constructing a History of the American Curriculum." in *Handbook of Resesarch on the Curriculum*, edited by Philip W. Jackson. New York: Macmillian.

Ku, Hyejin, and Asaf Zussman. 2010. "Lingua Franca: The Role of English in International Trade." *Journal of Economic Behavior and Organization* 75(2):250-60.

Kuznets, Simon. 1955. "Economic Growth and Income Inequality." *American Economic Review* 45(1):1-28.

Laitin, David D. 1992. *Language Repertoires and State Construction in Africa*. Cambridge, UK: Cambridge University Press.

Lam, Agnes. 2002. "English Language Education in China: Policy Changes and Learner's Experiences." *World Englishes* 21(2):245-56.

Lareau, Annette, and Erin McNamara Hovart. 1999. "Moments of Social Inclusion and Exclusion: Race, Class, and Cultural Capital in Family-School Relationships." *Sociology of Education* 72(1):37-53.

Lareau, Annette, and Elliot Weininger. 2003. "Cultural Capital in Educational Research: A Critial Assessment." *Theory and Society* 32:567-606.

Lee, Cheol-Sung. 2005. "Income Inequaly, Democracy, and Public Sector Size." *American Sociological Review* 70(1):158-81.

Lee, Chew Ging. 2012. "English Language and Economic Growth: Cross-Country Empirical Evidence." *Journal of Economic and Social Studies* 2 (1):5-20.

Lee, Jong-Wha, and Robert J. Barro. 1997. "Schooling Quality in a Cross Section of Countries." *National Bureau of Economic Research,* working paper 6198.

Levin, Deana. 1963. *Soviet Education Today*. New York: Monthly Review Press.

Levine, Ross, and David Renelt. 1992. "A Sensisitivity Analysis of Cross-Country Growth Regressions." *The American Economic Review* 82(4):942-63.

Lewis, Paul, M, Gary F. Simons, and Charles D. Fennig (Eds.). 2013. Ethnologue: Languages of the World, Seventeenth Edition. Dallas, TX: SIL International.

Lodares, Juan R. 2007. "Languages, Catholicismm, and Power in the Hispanic Empire (1500-1770)." in *Spanish and Empire*, edited by Nelsy Echaves-Solano and Kenya Dworkin y Mendez. Nashville, Tenn: Vanderbilt Univeristy Press.

Louhiala-Salminen, Leena, and Anna Kankaanranta. 2012. "Language as an Issue in International Communication: English or Local Language? If English, what English?" *Public Relations Review* 38(2).

Maher, John. 1986. "The Development of English as an International Language of Medicine." *Applied Lingustics* 7(2):206-18. Meyer, John W. 1992. "The Social

Construction of Motives for Educaitonal Expansion." in *The Political Construction of Education*, edited by Bruce Fuller and Richard Rubinson. New York: Praeger.

Manning, Patrick. 1998. *Francophone Sub-Saharan Africa*. Cambridge, UK: Cambridge University Press.

Matiki, Alfred J. 2001. "The Social Significance of English in Malawi." *World Englishes* 20(2):201-18.

Mazrui, Alamin M. 2002. "The English Language in African Education: Dependency and Decolonization." in *Language Policies in Education*, edited by James W. Tollefson. Mahwah, NJ: Lawrence Erlbaum Associates.

Mazrui, Ali A. and Alamin M. Mazuri. 1998. *The Power of Babel: Language & Governance in the African Experience*. Chicago: University of Chicago Press.
McCallen, Brian. 1991. "The Size of the World Market for EFL Programs and Materials." *Journal of Asian and Pacific Communication* 2(1):185-91.

McEneaney, Elizabeth H., and John W. Meyer. 2000. "The content of the Curriculum: An Institutionalist Perspective." in *Handbook of the Sociology of Education*, edited by Maureen T. Hallinan. New York: Plenum Publishers.

McMahon, Walter W. 1998. "Education and Growth in East Asia." *Economics of Education Review* 17(2):159-72.

Melitz, Jacques. 2007. "Language and Foreign Trade." *European Economic Review* 52(4):667-99.

Meyer, John W. 1992. "The Social Construction of Motives for Educaitonal Expansion." in *The Political Construction of Education*, edited by Bruce Fuller and Richard Rubinson. New York: Praeger.

—. 2006. "World Models, National Curricula, and the Centrality of the Individual." in *School Knowledge in Comparative and Historical Perspective: Changing Curricula in Primary and Secondary Education*, edited by Aaron Benavot and Cecilia Braslavsky. Hong Kong: Springer.

Meyer, John W., and Michael T. Hannan (Eds.). 1979. *National Development and the World System*. Chicago, IL: University of Chicago Press.

Meyer, John W., John Boli, George Thomas, and Francisco O. Ramirez. 1997. "World Society and the Nation-State." *American Journal of Sociology* 103(1):144-81.

Meyer, John W. and Brian Rowan. 1977. "Institutiaonlzied Organizations: Formal Structure as Myth and Ceremony." *American Journal of Sociology* 83(2):340-363.

Meyer, John W., David H. Kamens, and Aaron Benavot. 1992. *School Knowledge for the Masses*. London: Falmer Press.

Meyer, John W., Franciso O. Ramirez, Richard Rubinson, and John Boli-Bennet. 1977. "The World Education Revolution, 1950-1970." *Sociology of Educaiton* 50(4):242-58.

Mikhalchenko, Vida Io, and Yulia Trushkova. 2003. "Russian in the Modern World." in *Languages in a Globalising World*, edited by Jacques Maurais and Michael. A Morris. Cambridge Univeristy Press: Cambridge, UK.

Mugomba, Agrippah T. 1980. "Revolutionary Development and Educational Decolonization in Mozambique." in *Independence without Freedom: The Political Economy of Colonial Education in Southern Africa*, edited by Agrippah T. Mugomba and Mougo Nyaggah. Santa Barbara, CA: ABC-Clio.

Myers-Scotton, Carol. 1993. "Elite Closure as a Powerful Language Srtategy: The African Case." *International Journal of the Sociology of Language* 103(1):149-63.

Naylor, Phillip C. 2000. *France and Algeria: A History of Decolonization and Transformation*. Gainesville, FL: University Press of Florida.

Nelson, Richard R., and Edmund S. Phelps. 1966. "Investment in Humans, Technological Diffusion, and Economic Growth." *The American Economic Review* 56(1/2):69-75.

Nettle, Daniel. 1999. *Lingustic Diversity*. Oxford, UK: Oxford University Press.

Nielsen, Francois. 1994. "Income Inequality and Industrial Development: Dualism Revisited." *American Sociological Review* 59(5):654-77.

Novick, Miriam. 2010. "Between Coercion and Choice: English(es) and Multilingual Education in Post-Apartheid South Africa." *The English Languages: HIstory, Diaspora, Culture* 1(1):1-20.

Nunan, David. 2003. "The Impact of English as a Global Language on Educational Policies and Practices in the Asia-Pacific Region." *TESOL Quarterly* 37(4):589-613.

O'Neill, Edward T, Brian F Lavoie, and Rick Bennet. 2003. "Trends in the Evolution of the Public Web." *D-Lib Magaize* 9(4).

Ono, Hiroshi. 2005. "Digital Divide in East Asia: Evidence from Japan, South Korea and Singapore." *International Center for the Study of East Asian Development*.

Ostler, Nicholas. 2005. *Empires of the Word: A Language History of the World*. New York: Harper Perennial.

—. 2010. *The Last Lingua Franca: English Until the Return of Bable*. New York: Walker and Company.

Penny, Ralph. 1991. *A History of the Spanish Language*. Cambridge, UK: Cambridge University Press.

Petrakis, P. E., and D. Stamatakis. 2002. "Growth and Educational Levels: A Comparative Analysis." *Economics of Education Review* 21(6):513-21.

Pevehouse, Jon C, Timothy Nordstrom, and Kevin Warnke. 2004. "The Correlates of War - International Organizations Dataset, Version 2.3." *Conflict Management and Peace Science* 21(2):101-09.

Phillipson, Robert. 1992. *Lingustic Imperialism*. Oxford, UK: Oxford Universtiy Press. Plumper, Thomas, and Vera A. Troeger. 2007. "Efficent Estimation of Time-Invariant and Rarely Changing Variables in Finite Sample Panel Analyses with Unit Fixed Effects." *Political Analysis* 15(2):124-39.

Poot, Jacques. 2000. "A Sythesis of Emperical Research on the Impact of Government on Long-Run Growth." *Growth and Change* 31(3):516-46.

Prendergast, Catherine. 2008. *Buying Into English: Language and Investment in the New Capitalist World*. Pittsburg, PA: University of Pittsburg Press.

Psacharopouls, George. 1994. "Returns to Investment in Education: A Global Update." *World Development* 22(9):1325-43.

Quinn, Frederick. 2000. *The French Overseas Empire*. Westport, Conn: Preger.

Rabe-Hesketh, Sophia, and Anders Skrondal. 2008. *Multilevel and Longitudinal Modeling Using Stata*. College Station, TX: Stata Press Publications.

Ram, Rati. 1990. "Educational Expansion and Schooling Inequality: International Evidence and Some Implications." *The Review of Economics and Statistics* 72(2):266-74.

Ramirez, Francisco O., Xiaowei Luo, Evan Schofer, and John W. Meyer. 2006. "Student Achievement and National Economic Growth." *American Journal of Education* 113(1):1-19.

Ramirez, Franciso O., and John Boli. 1982. "Global Patterns of Educational Institutioanlization." in *Comparative Education*, edited by Philip Altbach, Robert Arnove, and Gail Kelly. New York: Macmillian.

Ramirez, Franciso O., and John Boli. 1987. "The Political Construction of Mass Schooling: European Origins and Worldwide Institutionalization." *Sociology of Education* 60(1):2-17.

Ramirez, Francisco O., and Richard Rubinson. 1979. "Creating Members: The Political Incorporation and Expansion of Education." in *National Development and the World System: Educational, Economic and Political Change, 1950-1970*, edited by John W. Meyer and Michael T. Hannan. Chicago: The University of Chicago Press.

Rauch, James E. 1997. "Networks Versus Markets in International Trade." *Journal of International Economics* 48(1):7-35.

Roberts, Cherly A. 1995. "Bilingual Educaiton Program Models: A Framework for Undertanding." *Bilingual Research Journal* 19(3):369-78.

Rodgers, Mark. 2004. "Absorptive Capability and Economic Growth: How Do Countries Catch-Up?" *Cambridge Journal of Economics* 28(4):577-96.

Romer, Paul M. 1990. "Human Capital and Growth: Theory and Evidence." *Carnegie-Rochester Conference Series on Public Policy* (251-286).

—. 1998. "Endogenous Technical Change." *The Journal of Political Economy* 98(5):71-102.

Rubagumya, Casmir M., Oksana Afitska, John Clegg, and Patrick Kiliku. 2011. "A Three-tier Citizenship: Can the state in Tanzania guarantee lingustic human rights?" *International Journal of Edcuation Development* 31(1):78-85.

Rubal-Lopez, Alma. 1996. "The Ongoing Spread of English: A Comparative Analysis of Former Anglo-American Colonies with Non-Colonies." in *Post Imperial English: Status Change in Former British and American Colonies, 1940-1990*, edited by Joshua Fishman, Andrew W. Conrad, and Alma Rubal-Lopez. Berlin: Mouton de Gruyter.

Rubinson, Richard, and Irene Browne. 2008. "Education and the Economy." in *The Handbook of Economic Sociology*, edited by Neil J. Smelser and Richard Swedber. Princeton, NJ: Princeton University Press.

Rubinson, Richard, and Bruce Fuller. 1992. "Specifying the Effect of Education on National Economic Growth." in *The Political Construction of Education: The State, School Expansion and Economic Change*, edited by Bruce Fuller and Richard Rubinson. New York: Praeger.

Scanlon, Christopher, and Michael Singh. 2006. "Theorizing the Decline of Linguistic Diversity." *International Jorurnal of the Sociology of Language* 182:1-24.

Schofer, Evan, and John W. Meyer. 2005. "The Worldwide Expansion of Higher Education in the Twentieth Century." *American Sociological Review* 70(6):898-920.

Segre, Claudio. 1975. *Fourth Shore: Italian Colonization of Libya*. Chicago: University of Chicago Press.

Shorish, M. Mobin. 1991. "Education of Ethnic Minorities in the Soviet Union." in *Education and the Colonial Experience*, edited by Philip G Altbach and Gail P Kelly. New York: Advent Books, Inc.

Sianesi, Barbara, and John Van Reenen. 2003. "The Returns to Education: Macroeconomics." *Journal of Economic Surveys* 17(2):157-200.

Simpson, Andrew. 2007a. "Hong Kong." in *Language and National Identity in Asia*, edited by Andrew Simpson. Oxford, UK: Oxford Univeristy Press.

—. 2007b. "Singapore." in *Language and National Identity in Asia*, edited by Andrew Simpson. Oxford, UK: Oxford University Press.

—. 2008. "Introduction." in *Language and National Identity in Africa*, edited by Adrew Simpson. Oxford: Oxford Univeristy Press.

Smith, Anthony D. 2001. *Nationalism: Theory, Ideology, History*. Malden, MA: Polity Press.

Smith, Tony. 1978. "A Comparative Study of French and British Decolonization." *Comparative Studies in Society and History* 20(1):70-102.

Smits, Jeroen, Janine Huisman, and Karine Kruijff. 2008. "Home Language and Education in the Developing World." edited by UNESCO: United Nations Education, Scientific and Cultural Association.

Snyder, David, and Edward Kick. 1979. "Structural Position in the World System and Economic Growth, 1955-1970: A Multiple-Network Analysis of Transnational Interactions." *The American Journal of Sociology* 84(5):1096-126.

Sokolsky, A. A. 1966. *A History of the Russian Language*. Madrid, Spain: Imp. Taravilla

Solow, Robert M. 1957. "Technical Change and the Aggregate Production Function." *The Review of Economics and Statistics* 39(3):312-20.

Solt, Frederick. 2009. "Standarizing the World Income Inequality Database." *Social Science Quarterly* 90(2):231-42.

Soysal, Yasemin Nuholu, and Suk-Ying Wong. 2006. "Educating Future Citizens in Europe and Asia." in *School Knowledge in Comparative and Historical Perspective: Changing Curricula in Primary and Secondary Education*, edited by Aaron Benavot and Cecilia Braslavsky. Hong Kong: Springer.

Spolsky, Bernard. 2008. "Introduction: What is Educational Lingustics?" in *The Handbook of Educational Lingustics*, edited by Bernard Spolsky and Francis M. Hult. Malden, MA: Blackwell Publishing.

Springhill, John. 2001. *Decolonization since 1945*. New York: Palgrave.

Strang, David. 1991. "Global Patterns of Decolonization, 1500-1987." *International Studies Quarterly* 35(4):429-54.

Summer Language Institute. various. *Ethnologue*. Dallas, Texas.

Sunal, Cynthia Szymanski. 1998. "Primary School Education in Sub-Saharan Africa." in *Schooling in Sub-Saharan Africa: Contemporary Issues and Future Concerns*, edited by Cynthia Szymanski Sunal. New York: Garland Publishing, Inc.

Swales, John. 1997. "English as Tyrannosaurus Rex." *World Englishes* 16(3):373-82.

Sylwester, Kevin. 2002. "Can Education Expenditures Reduce Income Inequality." *Economics of Education Review* 21(1):43-52.

Treffgarne, Carew. 1975. *The Role of English and French as Languages of Communication between Anglophone and Francophone West African States*. London: African Educational Trust.

Truchot, Claude. 2003. "Languages and Supranationality in Europe: The Lingustic Influence of the European Union." in *Languages in a Globalising World*, edited by Jacques Maurais and Michael. A Morris. Cambrige, UK: Cambridge University Press.

UNESCO. 2006. "Global Education Digest." UNESCO Institute for Statistics.

UNESCO. various years. *UNESCO Statistical Yearbook*: Montreal, Quebec.

Walter, Henriette. 1993. *French Inside Out: The Worldwide Development of the French Language in the Past, Present and the Future*. New York: Routledge.

Watson, Keith. 1994. "Caugth Between Scylla and Charybids: Lingustic and Educational Dilemmas Facing Policy-Makers in Pluralist States." *International Journal of Educational Development* 14(3):321-37.

Weick, Karl E. 1976. "Educational Organizations as Loosely Coupled Systems." *Administrative Science Quarterly* 21(1):1-19.

Williamson, Jeffery G. 1991. *Inequality, Poverty, and Hitory: The Kuznets Memorial Lectures*. Cambridge, MA: Basil Blackwell.

Wobmann, Ludger. 2003. "Specifying Human Capital." *Journal of Economic Surveys* 17(3):239-70.

World Bank. 2011. *World Development Indicators*. Washington, DC: World Bank.

Wright, Laurence. 2002. "Why English Dominates the Central Economy: An Economic Perspective on 'Elite Closure' and South African Language Policy." *Language Problems and Language Planning* 26(2):159-77.