Your development or mine? Effects of donor-recipient cultural differences on the aid-growth nexus

Anna Minasyan

University of Goettingen & University of Heidelberg

May 31, 2014

Abstract

Development aid from the western world may lead to adverse effects on the global South due to the neglected cultural context in the development framework. There is evidence showing that development agendas are mainly premised upon western thought and belief system. Therefore, I hypothesize that the expected effect of development aid on the economic growth of the recipients could be retarded due to the cultural differences between western donors and aid recipients. I test this hypothesis empirically by augmenting aid-growth model of Rajan and Subramanian (2008), presented in Clemens et al. (2012), with variables of cultural distance between a recipient and an average western donor. I use a co-ancestor coefficient (Fst genetic distance) and western education of the chief executive of the recipient country as proxies for measuring transmission of beliefs systems. Results of OLS panel estimation in first differences, for the period of 1970–2010, show that one unit increase in the co-ancestor coefficient reduces the effect of aid on growth by 0.2 percentage points. In turn, one percentage point increase in aid yields, on average, a 0.3 percentage point increase in growth when a country has been led by a US/UK educated leader two periods before.

JEL classification: O111; O170; O190

Keywords: aid effectiveness, culture, genetic distance, leader's education

---

I greatly appreciate feedback and comments from Axel Dreher, Stephan Klasen, members of "Globalization and Development" research training group at University of Goettingen, AEL Development Economics workshop in Zürich, Development Economics conference in Passau and participants of Summer School in Economic Growth in Warwick.

1 Introduction

The bulk of the published literature on aid effectiveness studies foreign aid's effect on economic growth based on recipient country characteristics only, which include a range of economic and social factors such as trade policy, inflation, budget balance, institutions, ethno-linguistic fractionalization, geography, initial GDP per capita, etc. Despite its long history and plethora of studies, the literature on aid effectiveness involving only these *one-sided* factors shows puzzling and asymmetric results (Doucouliagos and Paldam, 2009). Since development cooperation is a two- or multiple-sided relationship, where each party is characterized by different beliefs, preferences and values due to their differing historical, environmental and political pasts, this paper suggests that differential bilateral factors must also be considered in designing and evaluating aid effectiveness. It is possible that such differences matter and may even hinder the effectiveness of development aid.

This possibility is given further weight considering the scholarly and anecdotal evidence. Often times donor objectives are in conflict with local beliefs, preferences and values at particular points of time and contexts. This mismatch leads to unsustainable aid projects and failures of development paradigms (Gibson et al., 2005; Moyo, 2009; Altaf, 2011; Marchesi et al., 2011; Escobar, 2011).

In economic terms, financial aid for economic development is a transaction, involving two or more parties. Economic theory tells us that economic transactions are often plagued with information asymmetry problems that harm outcomes (Gibson et al., 2005; North, 1987). The culture of the recipient and the donor and their interplay can greatly influence development aid transactions. Cultural differences may give rise to increased information asymmetry problems between donor(s) and recipient and negatively affect any growth impact of aid (Gibson et al., 2005).

In political terms, development aid is as an intervention from the outside, in this paper the West, in the growth processes of the global South, premised upon donor (western) culture and values. Often times these interventions are led by time-specific development paradigms that mostly neglect diverse local beliefs, cultures, grassroots developments (Escobar, 2011) and other country-specific circumstances at recipient level.

This paper is, also, motivated by the aid effectiveness puzzle and recent findings on the effects of cultural differences on economic outcomes and development (Guiso et al., 2006; Radcliffe and Laurie, 2006; Sen, 2004). The main hypothesis of this paper is that development aid, specifically that premised upon western culture, is undermined when applied in societies with different cultures or belief systems. On one hand, this study fills in a gap in the aid effectiveness literature by including a determinant of aid effectiveness that captures an important donor-recipient interaction factor, and on the other hand, it contributes to the culture and development literature by studying the effects of cultural differences on development cooperation.

Section 2 presents an interdisciplinary view on cultural underpinnings of (western) development paradigms. In Section 3, I discuss various measures of cultural differences and explicate my choice of using proxies, i.e. co-ancestor coefficient (Fst genetic distance) and western education of a recipient country leader. Thereafter, I present Fst genetic distance (co-ancestor coefficient) in detail and construct an aid-adjusted genetic distance to average donor in Section 4. As detailed in Section 5, I closely follow the estimation methodology of Clemens et al. (2012) using its aid-growth model based on Rajan and Subramanian's (2008) study, where my contribution is the inclusion of an interaction term of aid with proxy measures of donor-recipient cultural differences. I report the empirical results in Section 6, finding that the effectiveness of aid is significantly reduced with a greater genetic distance to the average donor and that a transition from a western educated leader to a non western educated one results in a significant and positive change in aid effectiveness in a long run. Tests for the robustness of my results are presented in Section 7. Section 8 provides a discussion of transmission channels. Section 9 concludes with suggestions for further research and policy.

In this study culture and belief systems are used interchangeably and shall be understood as those beliefs that exist in a society at large regarding the functioning of different life aspects. It is assumed that such beliefs are either result of parental teaching or social learning process.

2 An interdisciplinary view on cultural underpinnings of development paradigms

The early development framework, in fact, emerged from modernization theories and practices in the West during the 20th century (Escobar, 2011; Gilman, 2003; Radcliffe and Laurie, 2006). Modernization is usually described as the transition from a traditional society into a modern one. Modernization is characterized, on one side, by cultural change (Inglehart and Baker, 2000) and, on the other side, by democracy, the development of a welfare state, egalitarianism, universal public education, income taxation and land reform (Gilman, 2003). Modernity is premised upon rational technology and scientific knowledge: "It is the model of the West detached in some way from its geographical origins and locus" (Gilman, 2003, quoting Edward Shils, p.1).

Furthermore, development discourses in the past century have been influenced by Talcott Parson's functional sociology argument that certain type of thinking and behavior can benefit the modernization process (Gilman, 2003; Turner, 1999). A distinct characteristic of modernization is the change in beliefs and values that took place during 20th century in the West (Inglehart and Baker, 2000). While changes in certain cultural beliefs and values accompanying modernization were *internal* to Western economies, in particular, to the United States (Rostow, 1990), these were imposed *externally* on the diverse populations in the global South via the development processes (Escobar 2011). As Turner (1999) notes, in the 1950s and 1960s, policymakers in donor countries were encouraged to advocate modern cultural traits in aid recipient countries following Parsonian theory. Changing the beliefs, attitudes and behaviors of local people was seen as a way of "dragging them away from 'traditional' practices and introducing them to the modern Western culture" (Schech and Haggis, 2000: 11,33 cited in Radcliffe and Laurie, 2006:233).

In contrast to mainstream development, post-development thinking is based on perspectives of local distinct cultures and 'localized, grassroots movements' (Escobar, 2011). As one of the exponents of post-development theory, Arturo Escobar, an anthropologist, regards mainstream development as imposition of Western modernity, progress and knowledge upon the diverse belief systems and cultures of the global South (Escobar, 1995; Radcliffe and Laurie, 2006). Escobar, specifically, describes several development aid (World Bank) projects

that failed due to a precarious application of Western models in Latin America (Escobar, 2011). As an alternative, he suggests that local communities should have an opportunity to address their problems locally. The West, in turn, may respond to development demands from the poor instead of supplying them with its own (western) development agenda (Escobar, 1995).

Anecdotal evidence from aid-recipient countries show that the differences in belief systems of donor and recipient countries can be part of the reason why development aid can be mostly ineffective in positively influencing economic growth in long run (Altaf, 2011; Easterly, 2001; Moyo, 2009).

In her 2009 book, Dambisa Moyo argues that foreign aid itself is largely responsible for Africa's underdevelopment. Most aid paradigms and policies have been destructive for African economies as they have distorted incentives, perpetuated corruption and supported dysfunctional political elite. In answer to the aid agenda for promotion of democracy in Africa, Moyo writes: "In the early stages of development it matters little to a starving African family whether they can vote or not. Later they may care, but first of all they need food for today, and tomorrows to come, and that requires an economy that is growing." (Moyo, 2009:44)

Altaf (2011) presents a detailed account of the failure of the Social Action Program, which was developed by the government of Pakistan to fulfill the criteria of a donor organization without considering their appropriateness in the local setting. For instance, among many, she describes a part of the program which carried out medical training for young rural females. The project failed to be effective (women either emigrated for employment or were left unemployed) as it not only neglected gaps in the local healthcare system but also ignored certain circumstances related to local culture: adverse perceptions about women's education and their employment in remote areas, superstitious thinking about vaccination and 'irrational' preferences for large families. As Altaf (2011) points out, the failure of the Social Action Program is not only a story of one program in one country but it is the story of the majority of aid programs in many developing countries.

In conventional economic theory, the heterogeneity of individual beliefs, preferences and attitudes has been long neglected. Economic theory is mainly based on the assumption of

rationality and responsiveness to economic incentives. Meanwhile, scholars from other disciplines argue that rationality should not, and does not, always prevail when humans take actions in different times, places and contexts (Kahneman, 2013). Pioneers in the field of evolutionary psychology, Cosmides and Tooby (1994), find that individuals display behavior that is better than rational: "our evolved psychology may have alternative modes of operation that prompt humans everywhere to find alternative sets of rules to be reasonable, depending on how closely their particular economic environment mimics various Pleistocene ecological conditions" (1994:331). In the last ten years the development of experimental and behavioral economics has helped researchers understand the importance of addressing heterogeneity of belief systems among different populations (Henrich et al., 2005).

Hence, it is the case that often development agendas do not fully take account of the cultural differences that exist between donors and recipients when designing development agendas. Sen (2004) stresses the importance of studying how culture affects development in the presence of aid. In Economides et al. (2004) view, foreign aid, as a form of intervention, can distort incentives and strengthen extractive institutions in vulnerable states because history and economic conditions have shaped the *minds* of people differently in such states. However, since its inception, development aid promoted by donor countries has often failed to sufficiently address cultural specific factors in its agenda (Altaf, 2011; Bauer, 1976; Easterly, 2001; Moyo, 2009).

Development aid was initially seen as the 'Big Push' necessary for poor countries to fill in the investment gap, take off and get on the economic growth path[1]. In an early study, Boone (1996) finds that aid does not have a significant impact on investment but rather increases consumption and the size of government. Successive influential studies in aid effectiveness literature find either positive (Clemens et al., 2012; Hansen and Tarp, 2001), conditional (Burnside and Dollar, 1997; Dalgaard et al., 2004) or no effect (Rajan and Subramanian, 2008) of development aid on growth. However, none of the influential aid-growth models have included the differences in culture between donors and recipients. This come as a surprise because the development framework is not only highly influenced but also initiated by the thinking of 'experts' in the West (Altaf, 2011; Easterly, 2001; Escobar, 2011; Moyo, 2009; Sen, 2004). Nevertheless, it is not easy to establish this (missing) link since culture, as a

[1] Big Push theory assumed that development aid would fill in the 'financing gaps' in low-income economies, increase investment levels and induce economic growth.

type of local knowledge, is largely embedded in individuals and is hard to measure (Gibson et al. 2005). This characteristic of culture makes it more difficult for both the donor and the recipient to recognize its influence in development agenda. This paper attempts to fill this gap and empirically analyze the effect of donor-recipient cultural differences using data on gene differentiation among populations and foreign education of recipient country leader as proxy measures for cultural similarity.

3 Measures of Cultural Differences

The concept of culture is defined differently depending on the type of literature and context. Cavalli-Sforza (2001:175), a population geneticist, defines it comprehensively as one's "ability to learn from the experience of others, [which] is a special phenomenon that relies on communication. [It] enables us to accumulate prior discoveries and helps us profit from experience transmitted by our ancestors-knowledge that we would not have on our own." In economic literature, culture is mainly defined as beliefs, values, preferences and norms, transmitted from one generation to another in a fairly unchanged manner (Bisin and Verdier, 2001; Guiso et al., 2009; Spolaore and Wacziarg, 2009). While psychologists find that values, attitudes, preferences and behaviors, ultimately, emerge from the beliefs that one holds (Fishbein and Ajzen, 1975). Thus, in this paper culture is understood as set of beliefs about functioning of various life aspects, which is shared by group of people and is either communicated by parental teaching or learned from the society at large[2].

Most known measures of cultural differences in economic and business literature, are based on data from surveys conducted in different geographic regions of the world (Hofstede and Hofstede, 2001; Schwartz, 1994, World Value Surveys). Hofstede's cultural dimensions include individualism, power distance, masculinity and uncertainty avoidance. These dimensions have been widely used in explaining behavioral preferences of people in organizations (Moorman and Blakely, 1995; Morris et al., 1994; Wagner, 1995). The surveys were initially conducted among IBM employees in various corners of the globe (40 countries in 1994 and 80 in 2001) to measure cultural differences towards life and the workplace.

[2] Although the explanation for persistent belief systems is beyond the focus of this paper, research shows that it is most likely determined by the environmental and historical past of the society (Cosmides and Tooby, 1994; Inglehart and Baker, 2000).

However, these cultural measures do not go beyond attitudes towards work and business matters. For example, its most prominent cultural dimension, individualism/collectivism, measures the extent to which it is believed that individuals are suppose to take care of themselves as opposed to being strongly integrated and loyal to a cohesive group (collectivism). This, as one can see, is a context-specific story of self-reliance and does not tell us anything about prevailing beliefs and attitudes in the society towards non-work related areas of life, such as politics, religion, traditions and social issues. The data also only covers two recent waves (1994 and 2001) and a first survey dated back to 1970s.

Schwartz (1994) suggests an alternative measure of cultural differences. Mainly, he composes seven cultural value types (conservatism, intellectual autonomy, affective autonomy, hierarchy, mastery, egalitarian commitment and harmony) into three cultural dimensions of (1) embeddedness versus autonomy (2) hierarchy versus egalitarianism and (3) mastery versus harmony (Schwartz et al 1999). The embeddedness versus autonomy dimension is also highly correlated with Hofstede's individualism/collectivism dimension (Gorodnichenko and Roland, 2010). Schwartz's cultural dimensions are may be more comprehensive, however the fact that the samples have been obtained from student and teacher populations only, makes it restrictive when interpreting results.

World Value Surveys (WVS) are opinion-based interviews designed to allow for cross-country comparison of individual beliefs, values and attitudes on variety of topics, such as democracy, religion, gender equality, traditions, globalization, citizen empowerment and life satisfaction. The coverage of countries ranges from 21 to 70, depending on the wave. In total there are currently six waves, starting with 1981 and the most recent waved ending in 2010, the data from which have been used for a variety of studies. For example, the measure of trust from World Values Surveys has been extensively used in economic literature to analyze the impact of culture on economic outcomes (Beugelsdijk, 2006; Bjørnskov, 2009; Guiso et al., 2009; Tabellini, 2008). World Values Surveys also focus on cultural change in societies all over the world, rather than only looking at existing cultural values at certain points in time. They are therefore a useful tool for dynamic analysis. Inglehart and Welzel (2005), using WVS responses of different populations on diverse socio-political issues, find two dimensions that dominate the picture of cultural differences in the world: Authority and Well-being. The

Authority dimension depicts the divergence in traditional and secular-rational values. Well-being depicts the divergence in survival and self-expression values.

In regards to the first dimension, the most important values of a traditional society are religion, patriotism, respect for authority, obedience, and marriage, among others. Secular-rational societies hold the opposite stand on these values. In regards to the second dimension, survival values prefer security to liberty, intolerance of homosexuality, political passivism, distrust in outsiders and a low level of life satisfaction, among others. The societies characterized by high levels of self-expression have the opposite stance. Most of the aid-recipient countries are characterized by survival and traditional values while most of the donor countries are characterized by secular rational and self-expression values. The findings of Inglehart and Welzel (2005) also suggest that values can change with modernization, and depending on the transition mode (agrarian to industrial and industrial to knowledge-society), different set of values can change (traditional to secular rational and survival to self-expression). This also is in line with the study that persistent political and economic institutions as well as stable (higher) income lead to cultural change in societies (Acemoglu and Robinson, 2012).

Cultural dimensions of authority and well-being would have been the most relevant measures of cultural differences for the purpose of this study because of their close association with modernization and development processes. However, considering issues of sample size and endogeneity, another exogenous measure is necessary to proxy for cultural differences between donors and recipients.

Several studies have employed instrumentation methodologies to tackle the possible endogeneity of culture and establish a causal effect of culture on economic outcomes. For instance, Guiso et al. (2009) instrument trust, as proxy for culture, with commonality in religion and ethnic origin as well as with somatic distance[3]. However, as Guiso et al. (2009) report, these instruments can also pick up a set of other cultural, institutional and legal connections that can affect the outcome variable – economic transactions. In contrast, Gorodnichenko and Roland (2011) instrument individualism/collectivism cultural dimension

[3] An indicator based on the average frequency of specific traits (hair color, height, etc.) present in the indigenous population, according to Guiso et al. (2009).

with genetic distance between populations. They base their choice of instrument on the model of Bisin and Verdier (2001) on cultural transmission.

Cavalli-Sforza (2001) establishes a conceptual framework on the relationship between genome and culture where both accumulate information to be passed on from one generation to another. Under natural selection, the fittest genetic types automatically prevail, while culture is received from another person and is kept selectively. Cavalli-Sforza (2001) mentions two modes of cultural transmission: traditional – through observation, teaching and communication – or through resources developed by modern technology – books, computers and other media.

In their model of economics of cultural transmission and dynamics of preferences, Bisin and Verdier (2001), show that globally stable heterogeneous preferences can exist among populations when children either acquire beliefs, values and preferences from their parents or adapt and imitate the beliefs, preferences and values most prevalent in a society. That is, family and society are considered as substitutes in the socialization process. Hence, preferences and cultural traits are either transmitted from parents to offspring, vertically, along with parental genes, or acquired through imitation and adaptation processes in the society, i.e. horizontally. The vertical cultural transmission from Bisin and Verdier (2001) can be related to the traditional way of cultural transmission, and the horizontal one can be related to the resource-based cultural transmission discussed in Cavalli-Sforza (2001). In this study, I analyze both channels of cultural transmission – vertical and horizontal.

Proxy for Vertical Transmission of Culture

Spolaore and Wacziarg (2009) develop an analytical framework linking genetic distance, as a measure for intergenerationally transmitted characteristics, with income differences across countries to explain long-term barriers to diffusion of technology and growth. Their findings show that income differences across countries are positively correlated not only with absolute genetic distance but also with relative genetic distance to the technological frontier[4]. They

[4] Authors consider the US and the UK as being on the technological frontier

stress that genetic distance captures the degree of genealogical relatedness among populations and also the differences in characteristics that are transferred from one generation to another in a fairly unchanged manner (vertically transmitted characteristics) over many periods. According to Romain Wacziarg, genetically close populations can "communicate more easily, understand each other's cultural norms and values, and adopt practices conducive to human development – such as rapid human capital accumulation, lower fertility and better political institutions.[5]" By extension, genetically distant populations would have a harder time communicating, understanding each other's cultural norms and values and may resist adoption of advantageous practices. The correlation between genetic distance and income differences is shown to be robust to geographic differences and to the share of European ancestry in a country's population. Overall, Spolaore and Wacziarg (2009) find that larger relative genetic distance from technological frontier is a barrier for technology adaption and diffusion of development from rich to poor countries. In addition, they point out that other cultural proxies often used in the literature such as religion, language and ethnicity are also captured by genetic distance because those are part of intergenerationally transmitted characteristics, i.e. they are transferred from parents to children along with parental genomes. These conclusions are linked with those of Bisin and Verdier (2000) who show that ethnic and religious minorities persist in the USA, in contrast to the "melting pot" theory, due to parental preferences for transmission of certain cultural traits to their offspring, such as strong preferences for marriages within same religion and ethnicity.

Desmet et al. (2007) analyzed relationship between genetic distance and culture among European population using World Value Surveys (WVS). They find that genetically closer Europeans give similar answers to the survey questions on perception of life, religion, family and morals. In their study, Desmet et al. (2007) show that genetic distance is robust to the inclusion of linguistic and geographic distances.

As Gorodnichenko and Roland (2010:3) indicate, based on the model of Bisin and Verdier (2001), "genetic distance can be seen as a proxy measure of differences in parental transmission of culture – beliefs and values." Based on the research of Cavalli-Sforza et al. (1994), Desmet et al. (2007), Spolaore and Wacziarg (2009) and the theory of Bisin and

[5] A university article on the link between genetic distance and income differences: http://www.anderson.ucla.edu/knowledge-assets/romain-wacziarg

Verdier (2001), genetic differences between populations can be a good proxy for measuring different cultural differences between donors and recipients. More importantly, it is an exogenous measure as genetic variation in geographic space is a random process and this particular measure of genetic distance, Fst co-ancestor coefficient, considers those characteristics of gene variation that are not related to physical fitness, such as frequencies of blood types between populations.

Thus, I capture the vertical transmission (from parents to offspring) of culture by using a measure of vertical transmission – weighted genetic distance – from Spolaore and Wacziarg (2009). Vertical transmission of culture assumes traditional way of cultural transmission, excluding cross-cultural learning between donors and recipients. Therefore, in this case, I expect development aid to have a negative effect on growth as genetic distance increases. To analyze effects of cultural differences on the aid-growth nexus in the presence of cross-cultural learning I examine horizontal transmission of culture.

Proxy for Horizontal Transmission of Culture

To capture a differential horizontal cultural transmission between donors and recipients, I consider recipient country leaders education abroad mainly in US or UK, as largest western donors, on average. This serves as a proxy for learning from the (donor's) society, in line with the argument of Cavalli-Sforza (2001) and theory of Bisin and Verdier (2001).

Specifically, I am interested in the education of the recipient country leader (the chief executive) in a donor country. The focus is on the leaders because these individuals are responsible for internal and external policy at large, and development aid objectives need to be coordinated with a recipient country's leadership as described in The Paris Declaration on Aid Effectiveness (2005). Also, a study by Dreher et al. (2009) shows that the professional background and education of the head of the government, in the context of developing economies, matters for reforms. Another study by Spilimbergo (2009) finds that individuals with foreign education promote democracy in their home countries only in cases where their foreign education is acquired in democratic states.

For example, Georgian president Mikheil Saakashvili, who led the country from 2004 to 2013, received his education (human rights) from universities in the US and Europe. He believed that to achieve development a cultural transformation must occur simultaneously with reforms (Lanskoy and Areshidze, 2008; "Lunch with the FT," n.d.). That, it is possible that leaders educated for a prolonged period in donor countries might try to promote the culture of the respective donor country back home (Constant and Tien, 2010). If this holds then I expect to find a positive relationship between aid and growth in cases where a country's leader has been educated in western donor countries. This expected effect can be driven by the decreased transaction costs in negotiating the appropriateness of the western development framework for the recipient country. In addition, communication and negotiation costs may decrease due to the similarity of belief systems in relation to development and growth.

4 Measuring Genetic Distance

In different populations genes can take different forms (alleles), which are strictly hereditary, i.e. A, B, O and AB blood types. The frequencies of gene forms are different among various populations and are used by geneticists to calculate distances between populations (Spolaore and Wacziarg, 2009) [6]. Following Cavalli-Sforza et al. (1994), Spolaore and Wacziarg (2009) consider a type of genetic distance measure, namely Fst distance, also known as "co-ancestor coefficient", which captures the time-span since two populations shared common ancestors. These genetic distances are based on population trees, similar to family trees[7]: after splitting apart, differentiations in genes tend to accumulate over time, which results in a linear link between genetic distance and the time since two populations last shared common ancestors, i.e. common frequencies of gene forms (Spolaore and Wacziarg 2009). Spolaore and Wacziarg (2009) focus on *neutral* characteristics of genetic variations (genetic markers), which are affected only by random drift rather than natural selection. This means genes considered in calculating Fst genetic distance have no relation to physical fitness (Cavalli-Sforza, 2001). In addition, as Cavalli-Sforza (2001) explains, this type of genetic differences

[6] A gene is commonly defined as a DNA sequence that codes for a protein (protein polymorphism). The data on allele frequencies for different genes for populations in the world can be found at http://alfred.med.yale.edu/ . Other details on specifics of genetic distances can be referred to in Cavalli-Sforza (2001), Cavalli-Sforza et al. (1994), and Spolaore and Wacziarg (2009).

is between individuals and not 'races': genetic differences between physical characteristics of populations are very small and mainly attributable to climate changes over long periods of time.

As Spolaore and Wacziarg (2009) explain, F_{ST} distances, like most measures of genetic differences, are derived from heterozygosity indices, which capture the probability that two gene forms (allele) selected randomly from two populations will be similar. F_{ST} takes a value of zero only in the case of identical allele distributions across two populations, whereas it takes positive values where allele distributions differ. The larger the difference in allele distributions between two populations the higher is the F_{ST} genetic distance between them. In addition, F_{ST} genetic distance is strongly associated with the time since two populations split apart: isolation can cause change in genes due to random genetic drift or natural selection (Spolaore and Wacziarg 2009).

Using data from Alesina et al. (2003) and Cavalli-Sforza et al. (1994), Spolaore and Wacziarg (2009) construct a weighted genetic distance measure, which accounts for immigrant based countries, such as the United States, where the population is made up of genetically distant subpopulations. Spolaore and Wacziarg (2009) compute the weighted F_{ST} genetic distance between two countries in the following way:

$$Fst_{ij}^{W} = \sum_{n=1}^{N} \sum_{a=1}^{A} (s_{in} \times s_{ja} \times d_{na}) , \quad (1)$$

where s_{in} is the share of group n in country i (own country), s_{ja} is the share of group a in country j and d_{na} is the Fst genetic distance between groups n and a.

Based on the model of Bisin and Verdier (2001), culture can be transmitted vertically from parents to offspring along with parental genomes. That is, genes can proxy for transmission of culture, and genetic distance can be used as a proxy measure for cultural differences between two countries. The co-ancestor coefficient, F_{ST}, is an appropriate measure for genetic distance as well as a proxy for culture because the longer the time since two populations split the more diverse their culture can get. In terms of development aid effectiveness, F_{ST} genetic distance between two populations matters more or less depending on the magnitude (involvement or degree of intervention) of the aid received. To capture this influence, I follow the method used

in Dreher et al. (2013c) and compute an aid-adjusted measure of the above-described weighted F_{ST} genetic distance:

$$AwGD_{i,t} = \sum_{i=1}^{n} s_{ij,t} * Fst_{ij}^{W} \quad (2)$$

where $s_{ij,t}$ is donor $j's$ share of total bilateral aid in country i, in year t. Fst_{ij}^{W} is the weighted genetic distance between recipient i and donor j. Thus, $AwGD_{i,t}$ is the aid-adjusted genetic distance to the average donor for each recipient in period t. The correlation coefficient between Fst_{ij}^{W} and $AwGD_{i,t}$ is 0.9. In line with the argument in the previous section, larger aid-adjusted genetic distance between a recipient and an average donor indicates bigger differences in intergenerationally transmitted characteristics, including preferences, attitudes, values and beliefs that constitute culture in this paper. In accordance with the hypothesis of this paper, I expect aid effectiveness to decrease with larger aid-adjusted genetic distance to the average donor.

5 Data and Method

The data on weighted F_{ST} genetic distance is from Spolaore and Wacziarg (2009). Bilateral aid data on gross disbursements is from 23 Development Assistant Committee (DAC) donors taken from the OECD's Aid Statistics. The data on leaders' foreign education and education level is from Dreher et al. (2013b). As in Dreher et al. (2012a, 2013c), this paper closely follows the approach in Clemens et. al. (2012) and studies the interaction effect of genetic distance and bilateral aid on economic growth, using the extended aid effectiveness model from Rajan and Subramanian, (2008). Additionally, I have extended the data up to 2010. That is, the panel data covers 66 countries from the period of 1971 to 2010. The model of Rajan and Subramanian (2008), hereafter RS, is usually categorized as belonging to the null strand of aid effectiveness literature they find that aid has no effect on growth (Doucouliagos and Paldam, 2009). The RS specification finds little robust evidence of a positive (or negative) relationship between aid inflows and economic growth, using net ODA – bilateral and multilateral. In addition, most of the studies in the aid effectiveness literature use instrumentation methods to tackle the endogeneity of aid. However, as Clemens et al. (2012) argue, based on the findings from Clemens and Bazzi (2009), these studies are supported by

invalid instrumentation and GMM methodology (a "black-box"), which undermine the accuracy of the empirical results. Instead, Clemens et al. (2012) lag aid by one period to allow for a causal effect of aid on growth and to address the problem of reversed causality. In addition to lagged aid, they use first differences to capture country specific time-invariant effects and prevent issues associated with omitted variables. This paper follows the same procedure by augmenting the RS specifications in Clemens et al. (2012) with the variable for cultural proxies.

Thus, to proxy for vertical transmission of culture I use an aid-adjusted co-ancestor coefficient (genetic distance). My variable of interest is the interaction between aid-adjusted genetic distance and bilateral aid. The reduced-form empirical model is as follows:

$$\Delta G_{i,t} = \beta + \delta \Delta Aid_{i,t-1} + \gamma AwGD_{i,t-1} + \zeta \Delta Aid_{i,t-1} * AwGD_{i,t-1} + \eta \Delta\left(Aid_{i,t-1}^2\right) + \\ + \theta \Delta X_{i,t} + \epsilon_{i,t}, \quad (3)$$

where, $\Delta G_{i,t}$ – is (the change in) recipient country i's annual GDP per capita growth rate averaged over period t (five years), $\Delta \text{Aid}_{i,t-1}$ denotes the (change in) share of total bilateral aid in GDP received by country i in the period $t-1$, $AwGD_{i,t-1}$ is the lagged aid–adjusted measure of genetic distance as described in the previous section, and $\Delta Aid_{i,t-1}^2$ is (the change in) the squared term of aid to account for the nonlinear effects as in Clemens et al. (2012). $\Delta X_{i,t}$ is (the change in) the vector of control variables as used in the original studies of RS[8] and $\epsilon_{i,t}$ is the error term.

Similarly, in terms of horizontal cultural transmission, I augment the RS specification from Clemens et al. (2012) with leaders' education in the West, i.e. in the US and/or the UK. Leaders' education level is also controlled for in the model. My variable of interest is the interaction term between bilateral aid and education of a leader in US/UK. The reduced form of the empirical model is:

$$\Delta G_{i,t} = \beta + \delta \Delta Aid_{i,t-1} + \gamma \Delta F_{i,t} + \zeta \Delta Aid_{i,t-1} * \Delta F, t_i + \varphi \Delta EL_{i,t} + \eta \Delta\left(Aid_{i,t-1}^2\right) + \\ + \theta \Delta X_{i,t} + \epsilon_{i,t}, \quad (4)$$

[8] In the RS model the controls are: log of initial GDP/capita, initial Sachs-Warner trade policy index, log of initial life expectancy, log of inflation, initial M2/GDP, budget Balance/GDP, revolutions, and period dummies

where, $F_{i,t}$ indicates if the country leader has been educated in the US or UK. It is a continuous variable, since year dummies have been averaged over five year periods. For example, higher positive values (<0.5) indicate that, on average, during period t the country leader had US or UK education. $\Delta EL_{i,t}$ is the (change in the) level of a leader's education ranging from illiterate to advanced (doctoral) degree. The rest of the variables are defined as in equation (1).

As mentioned above, the estimation strategy in this paper is in line with the estimation strategy in Clemens et al. (2012). That is, aid is lagged to allow for its impact on growth; the equation is in first differences to remove time-invariant country characteristics; and it includes the squared term of aid to account for a non-linear relationship between aid and growth. According to Clemens et al. (2012) such a strategy is preferred to instrumentation as it addresses reversed causality (lagged aid) and omitted variable bias (first differences). Furthermore, Nizalova and Murtazashvili (2012) argue that interactions of (possibly) endogenous and exogenous variables produce consistent OLS estimates. In addition, as Nunn and Qian (2012) point out, the interaction between an exogenous term (i.e. genetic distance to average donor or education in a donor country) and a potentially endogenous term (bilateral aid), can be interpreted as exogenous since the main effect of the endogenous variable is directly controlled for in the estimation[9]. That is, I trust that the potential endogeneity of the variables of interest is taken into account and that the OLS estimates are consistent.

6 Empirical results

6.1 Application of Vertical Transmission of Culture

Table 1 displays OLS regression results in first differences using the panel data. The dependant variable is (the change in) average per capita GDP growth rate. Aid is measured as (the change in) gross bilateral Official Development Assistance (ODA) disbursements as percentage of GDP. Besides the control variables of the RS specification used in Clemens et al. (2012), additional controls are included for multilateral aid as well as multilateral and

[9] Nunn and Qian cite section 2.3.4 of Angrist and Krueger (1999) for technical details.

bilateral repayments[10]. All variables in the panel data are averaged over five years, covering 66 countries, with a total of 8 periods from 1971 to 2010. The model is augmented with the variable of interest, the interaction between gross bilateral aid and the aid-adjusted co-ancestor coefficient (Fst genetic distance). All regressions are in first differences while aid is also lagged once. The aid-adjusted Fst distance is lagged only, as the genetic distance data does not vary over time: the difference would only capture the change in the aid weights[11].

Column 1 of Table 1 displays the results without inclusion of the variable of interest and its interaction term. As one can see, aggregate bilateral aid is statistically insignificant. This result is in line with Rajan and Subramanian's (2008) original results as well as the result in Clemens et al. (2012) when 'long-impact' aid is considered[12]. The next column includes the variable of interest, which has a negative effect on growth, statistically significant at the ten percent level. In the work of Spolaore and Wacziarg (2009), the Fst genetic distance or co-ancestor coefficient is explained as a barrier to technological diffusion: distant populations find it harder to communicate and understand each other, which leads to slower adoption of the policies beneficial to human development. The further away (Fst distance) a population is from the technological frontier the more numerous the barriers for technological diffusion (Spolaore and Wacziarg, 2009). Hence, in this model the single effect of the Fst distance can also be interpreted as the barrier to technological transfers from the donor countries.

In the third column of Table 1, Fst distance to average donor (23 DAC donors) is interacted with gross bilateral aid received from the 23 donors[13]. The coefficient of the gross bilateral aid is statistically significant at five percent level and positive once the interaction term is introduced. However, its positive effect is reduced by Fst genetic distance to average donor, implied by the statistical significance of the interaction term at five percent level. Thus, an increase of one standard deviation, 0.5, in Fst distance, reduces the effect of aid on growth by 0.11 percentage points.

[10] Clemens et al (2012) use net total aid in their analysis. As this paper focuses on gross bilateral aid, controls for multilateral aid and repayments are included separately.
[11] In robustness checks the results are also provided when the aid-adjusted Fst distance is differenced.
[12] Clemens et al (2012) find that early-impact aid, mostly investment in infrastructure and tangible goods, has a positive impact on growth in the RS specification. However, in this study we focus on the impact of aid on long-run growth rather than short-term growth boosts.
[13] In robustness check an additional control is included for the bilateral aid received from donors who are not among these twenty-three.

Table 1. Effect of Common Ancestry on the Growth Effects of Aid

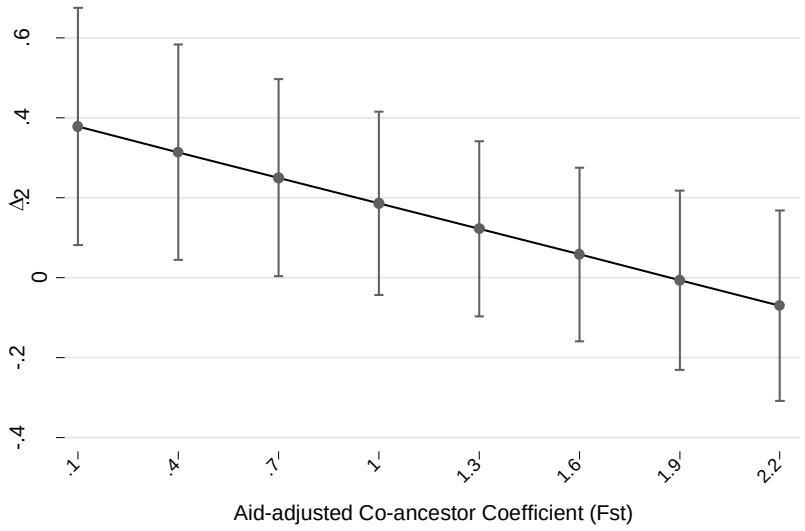
Dependant variable: Economic Growth	(1)	(2)	(3)	(4)
Bilateral aid/GDP	0.153	0.128	0.399**	0.404
	[0.133]	[0.136]	[0.186]	[0.287]
Co-ancestor coefficient (Fst)		-0.861*	-0.950**	-0.900**
		[0.457]	[0.460]	[0.452]
Bilateral Aid/GDP*Fst			-0.213**	-0.183**
			[0.087]	[0.085]
Bilateral repayments/GDP	-0.375	-0.351	-0.446	-1.472*
	[0.282]	[0.287]	[0.293]	[0.870]
Multilateral Aid/GDP	-0.157	-0.105	-0.026	0.049
	[0.141]	[0.143]	[0.139]	[0.355]
Multilateral repayments/GDP	-1.506*	-1.114	-0.866	-4.231**
	[0.906]	[0.942]	[0.922]	[2.136]
Bilateral Aid/GDP squared				-0.001
				[0.006]
Bilateral repayments/GDP squared				0.303
				[0.211]
Multilateral Aid/GDP squared				-0.002
				[0.017]
Multilateral repayments/GDP squared				1.622*
				[0.905]
Adj. R-Squared	0.279	0.287	0.293	0.292
Number of Countries	66	66	66	66
Number of Observations	378	378	378	378

OLS panel estimation in first differences. Aid variables are lagged once. All regressions include period dummies. Control variables are: initial GDP p.c.(log), initial life expectancy(log), openness, inflation(log), initial M2/GDP, budget balance/GDP, revolutions. Significance levels * p<0.10, ** p<0.05, *** p<0.01.

In the column 4, a squared term of aid is introduced as, according to Clemens et al. (2012), any non-linear effects of aid should also be captured in the analysis. Squared terms of multilateral aid and multilateral and bilateral repayments are also included. This takes away the statistical significance of the linear effect of bilateral aid, while the interaction term remains negative and statistically significant at five percent level. The linear, statistically significant effect of aid is weakened by the positive and statistically significant effect of the squared term of multilateral repayment (other squared terms have no statistical significance). The positive sign of the squared term of the multilateral repayment is surprising, but it could be the case that it is signaling early signs of a self-reliant and growing economy.

The marginal effects graph depicted in Figure 1 shows that for the majority of the countries in the sample the effect of aid remains positive, however once countries have larger than 1.5 aid-adjusted Fst distance to the average donor, the overall effect of bilateral aid turns negative. These countries include Tanzania and Botswana among 18 other countries, mostly from sub-Saharan Africa. Also, in the sample, on average, Poland has the smallest aid-adjusted (weighted) Fst distance to the average donor, 0.1, while The Republic of Congo has the largest aid-adjusted Fst distance to the average donor, 2.2.

Figure 1. Average Marginal Effects of Aid on Growth



The application of the theory on vertical transmission of culture to the regression results suggests that aid effectiveness is significantly reduced with larger genetic distances between the recipient and the average donor. This also conforms with the notion that culturally (genetically) closer populations find it easier to communicate and understand each other, which leads to a faster adoption of growth-generating polices.

Thus, when donor-recipient cultural differences are ignored, development strategies and their adoption by recipient countries might not result in positive economic growth but rather retard the otherwise positive effects of development cooperation.

6.2 Application of Horizontal Transmission of Culture

In this section, I replicate results of RS's specification from Clemens et al. (2012), considering horizontal transmission of culture. I am interested to see whether a leader's (chief executive) education in US/UK matters for aid effectiveness. I use the leader's location of education (environment) as proxy for societal transmission of culture – values, preferences, attitudes, norms and beliefs – in accordance with theory of Bisin and Verdier (2001) and findings from other relevant literature (Spilimbergo, 2009). First, I use binary data for the leader's education in the US and the UK (0/1) and then, to match the data with the periods in the RS model, I average the binary data over five year periods and obtain a continuous variable for education abroad, i.e. US and/or UK. Education in one of these two largest donor countries is crucial because modernization is historically seen as westernization (Hayek, 1973), and the development policies are highly influenced by economics (Sen, 2004), which, in turn, is Americanized (Coats, 1997). That is, one can expect development polices to be motivated by western preferences, attitudes, values and beliefs[14]. I expect an additional positive effect of aid on growth if the leader was educated in the West because during his/her stay s/he probably developed a good understanding of western culture, preferences, attitudes and values and, most likely, also adopted them. As a result, I assume leaders would promote so-called westernization back home.[15]. Mainly, I would like to see whether western educated leaders also put 'western' aid policies to an effective, growth-generating use, relative to their non-US/UK educated predecessors/successors. Again, I estimate panel date with OLS in first differences, where a leader's education (US/UK) and the level of education (control) are also in first differences. My variable of interest is the interaction term between bilateral aid and the leader's education in the two largest donor countries, the US and UK. Table 2 shows the regression results for 66 countries from 1971 to 2010 averaged over five year periods. As in Table 1, in column 1, aid has no significant effect on growth in this specification. In the second column, I add education location (US/UK) and the education level of the country's chief executive, which on their own, do not have own significant impact on a country's economic growth. In the third column, bilateral aid is interacted with education in the US/UK

[14] However, modernization does not necessarily require westernization(Lal, 2000).

[15] On a relevant matter, Bauer (1981) cites Caldwell (1976), pointing out that in Southern Nigeria contraceptives are widely available but used only among small minority of women who accept western attitudes as a result of western education, contacts and media.

to test whether, on average, changes in a leader's education in the US/UK changes the growth effects of aid.

Table 3. Executive's Education in US/UK and Growth Effects of Aid

Dependant variable: Economic Growth	(1)	(2)	(3)	(4)	(5)
Bilateral aid/GDP	0.17	0.174	0.193	0.211*	0.286
	[0.137]	[0.140]	[0.133]	[0.128]	[0.254]
Ed US UK		0.472	0.551	0.374	0.261
		[0.471]	[0.455]	[0.632]	[0.636]
Education Level		0.035	-0.009	-0.026	-0.007
		[0.197]	[0.198]	[0.207]	[0.202]
Bilateral Aid/GDP*Ed US UK			-0.290*	-0.713**	-0.811***
			[0.167]	[0.284]	[0.312]
Education abroad (incl. US/UK)				0.206	0.331
				[0.667]	[0.703]
Bilateral Aid/GDP*Education abroad (incl. US/UK)				0.548*	0.623*
				[0.302]	[0.323]
Bilateral repayments/GDP	-0.393	-0.394	-0.405	-0.449	-1.919**
	[0.285]	[0.290]	[0.286]	[0.285]	[0.946]
Multilateral Aid/GDP	-0.167	-0.166	-0.176	-0.202	-0.221
	[0.143]	[0.147]	[0.143]	[0.143]	[0.371]
Multilateral repayments/GDP	-1.566*	-1.567*	-1.652*	-1.796**	-6.184***
	[0.917]	[0.937]	[0.898]	[0.911]	[2.055]
Bilateral Aid/GDP squared					-0.002
					[0.008]
Bilateral repayments/GDP squared					0.423*
					[0.230]
Multilateral Aid/GDP squared					0.006
					[0.018]
Multilateral repayments/GDP squared					2.106**
					[0.879]
Adj. R-Squared	0.28	0.277	0.281	0.283	0.288
Number of Countries	66	66	66	66	66
Number of Observations	378	378	378	378	378

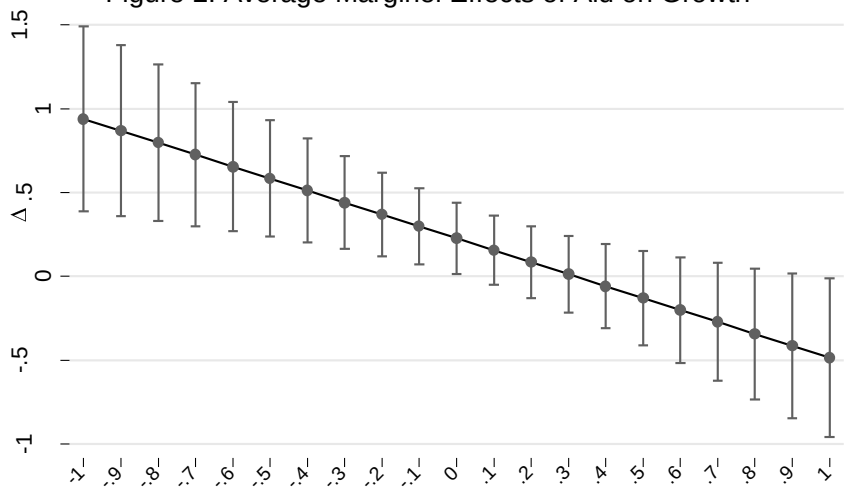
OLS panel estimation in first differences. Aid variables are lagged once. All regressions include period dummies. Control variables are: initial GDP p.c.(log), initial life expectancy(log), openness, inflation(log), initial M2/GDP, budget balance/GDP, revolutions. Significance levels * p<0.10, ** p<0.05, *** p<0.01.

As one can see, the interaction term in column 3 is statistically significant at the ten percent level and has a negative sign, which is somewhat unexpected. In column 4, I add another control variable for a leader's education abroad, which takes the value of 1 if the leader is educated in a country other than his or her home country and 0 otherwise. This is an important control, since it also considers the effect of being educated abroad in general versus education in the West, i.e. the US/UK (only 25% of the sample has been educated in the US/UK). The

coefficient of the main variable of interest remains negative but has a stronger statistical significance in this case. The results also show that, controlled for the effect of leader's education in the US/UK, in general, education abroad has positive effect on the aid-growth nexus in short run[16]. In column 5, I also include squared terms of the aid and repayment variables, which increase the magnitude of the coefficient of the variable of interest and strengthen its statistical significance to the one percent level.

Looking at the marginal effects in Figure 2, one can see that the effect of aid on growth changes negatively when a country's leadership transitions from a western educated to a non-western educated one. Assuming that leaders educated in the US/UK also promote cultural change, mainly "westernization", in the society then the negative sign of the coefficient can be explained in the following way: At first, cultural transformation in the society faces resistance, which increases transaction costs, but then gets adopted with time as change in belief and value systems become established with generational change (Inglehart and Welzel, 2005).

Figure 2. Average Marginel Effects of Aid on Growth



[16] When leader's education in US/UK is not controlled for the single- and interaction effect of foreign education becomes negative and not significant at conventional levels.

If westward cultural transformation promoted by the western-educated leaders brings changes to the beliefs and value system in the society ("Lunch with the FT," n.d.) with a time lag, then one should expect a switch of the coefficient sign, if the education variables are lagged. In Table 2a, I replicate results of column 3 in Table 1, and, indeed, it is the case that when the leader's US/UK education variable is lagged twice, the effect of being educated in the US/UK becomes positive and statistically significant for the aid-growth nexus.

Table 2a. Lagged effects of leader's US/UK education on aid-growth nexus

Dependant variable: Economic Growth	(1)	(2)	(3)
Bilateral aid/GDP	0.193	0.07	0.135
	[0.133]	[0.132]	[0.129]
Ed US UK	0.551	0.437	0.42
	[0.455]	[0.503]	[0.484]
Education Level	-0.009	-0.074	-0.058
	[0.198]	[0.206]	[0.199]
Bilateral Aid/GDP*Ed US UK	-0.290*	0.320*	-0.269*
	[0.167]	[0.185]	[0.159]
Education twice lagged	No	Yes	No
Adj. R-Squared	0.281	0.306	0.304
Number of Countries	66	66	66
Number of Observations	378	338	338

OLS panel estimation in first differences. All regressions include period dummies. Aid is lagged only once. Control variables are: initial GDP p.c.(log), initial life expectancy(log), openness, inflation(log), initial M2/GDP, budget balance/GDP, revolutions, multilateral aid, bilateral and multilateral repayments. Significance levels * p<0.10, ** p<0.05, *** p<0.01.

To make sure this is not a sample issue; column 3 uses the same sample from column 2 but without the education lags: the coefficient sign is negative as expected given the short-term resistance effect. Hence, in long-run, the education in the US/UK pays off in terms of aid effectiveness as it, presumably, promotes cultural transformation together with economic reforms, which leads to decreased information asymmetry and transaction costs. In terms of the economic significance of a leader's education in the US/UK and aid's effect on growth, results in column 1, Table 2a, show that when bilateral aid is increased by one percentage point, and a US/UK educated leader was in the power for the most time, two periods (10 years) before, then its contribution to the aid effect is an increase of 0.3 percentage points in growth, significant at the one percent level.

7. Robustness tests

In Table 3, I test the regression results in Table 1, first differencing and lagging aid-adjusted Fst genetic distance rather than only lagging in Column 1. In column 2, I control for humanitarian aid, which is not part of the gross bilateral ODA and in column 3, I control for the bilateral aid from other donors from OECD aid statistics, which were not part of the 23 bilateral donors in Table 1. The regression results in all three columns show that the negative coefficient of the interaction term of bilateral ODA and aid-adjusted genetic distance is robust and statistically significant at the five percent level (column 2 and 3), and the ten percent level in column 1. In column 1, the differencing of the aid-adjusted genetic distance, however, is not meaningful as the actual Fst co-ancestor coefficient (genetic distance) data do not change over time and the resulting changes emerge only from the changes of disbursed bilateral aid.

Table 3. Robsutness tests: Effect of Common Ancestry on the Growth Effects of Aid

Dependant variable: Economic Growth	(1)	(2)	(3)
Bilateral aid/GDP	0.173	0.401**	0.380**
	[0.130]	[0.186]	[0.174]
Co-ancestor coefficient (Fst)	-6.141**		
	[2.690]		
Bilateral Aid/GDP*Fst	-1.633*		
	[0.954]		
Co-ancestor coefficient (Fst)		-0.949**	-0.975**
		[0.461]	[0.458]
Bilateral Aid/GDP*Fst		-0.214**	-0.216**
		[0.086]	[0.084]
Humanitarian Aid/GDP		-0.19	
		[2.083]	
Rest Bilateral Aid/GDP			1.207**
			[0.598]
Fst-differenced	Yes	No	No
Adj. R-Squared	0.285	0.291	0.305
Number of Countries	66	66	66
Number of Observations	378	378	378

OLS panel estimation in first differences. Aid variables are lagged once. All regressions include period dummies. Controls are: initial GDP p.c.(log), initial life expectancy(log), openness, inflation(log), initial M2/GDP, budget balance/GDP, revolutions as well as multilateral aid, multilateral and bilateral repayments. Significance levels * p<0.10, ** p<0.05, *** p<0.01.

In Table 4, I test the robustness of the results from column 3 and 4 of Table 2 and column 1 from Table 2a. To do so, I add additional control variables regarding the power constraints of the chief executive – the leader. Thus, in column 1, I control for the country's democracy level, using unified democracy scores from Pemstein et al. (2010). Depending on the level of

democracy, the power of the executive might vary and more time may be required from policy changes to implementation and the realization of results. The coefficient of the interaction in column 1 stays robust to the inclusion of democracy: it is still negative but gains stronger statistical significance. It is interesting to see that democratic change itself has a negative effect on growth, which is in line with several existing studies (Gerring et al., 2005; Helliwell, 1994).

Table 4. Robustness tests: Executive's Education Abroad and Growth Effects of Aid

Dependant variable: Economic Growth	(1)	(2)	(3)	(4)
Bilateral aid/GDP	0.203	0.223*	0.12	0.188
	[0.138]	[0.134]	[0.147]	[0.133]
Ed US UK	0.69	0.568		0.424
	[0.453]	[0.619]		[0.621]
Education Level	-0.04	-0.041		-0.086
	[0.204]	[0.210]		[0.222]
Bilateral Aid/GDP*Ed US UK	-0.327**	-0.769***		-0.699**
	[0.164]	[0.255]		[0.273]
Education abroad		0.123		0.083
		[0.680]		[0.708]
Bilateral Aid/GDP*Education abroad		0.573**		0.493*
		[0.283]		[0.295]
Bilateral Aid/GDP*Ed US UK (L2)			0.358**	
			[0.176]	
Bilateral Aid/GDP*Education abroad (L2)			-0.114	
			[0.160]	
Democracy	-1.025*	-1.033*	-1.086*	-1.161*
	[0.530]	[0.530]	[0.596]	[0.607]
Effective Executive	-1.882***	-1.863***	-1.706***	-1.576***
	[0.515]	[0.500]	[0.515]	[0.510]
Head of State	3.005**	3.016**	2.687**	2.472*
	[1.342]	[1.336]	[1.266]	[1.269]
Adj. R-Squared	0.306	0.309	0.327	0.329
Number of Countries	64	64	64	64
Number of Observations	357	357	320	320

OLS panel estimation in first differences. Aid variables are lagged once. All regressions include period dummies. Control variables are: initial GDP p.c.(log), initial life expectancy(log), openness, inflation(log), initial M2/GDP, budget balance/GDP, revolutions as well as multilateral aid, multilateral and bilateral repayments.
Significance levels * p<0.10, ** p<0.05, *** p<0.01.

In the column 2, I control for the variable on (the change in) the "effective executive": which is determined by the form of governance: monarchy, presidential, parliamentarian, military or socialist. The value ranges from 1 to 5, where higher numbers correspond to military and socialist dictatorships (Banks, 2011). One can see that transitioning into more authoritarian

regimes has a negative impact on growth. I also control for the head of the state (monarch, president, premier, military, other – i.e. general secretary in communist regimes), which is another variable for controlling for the leader's power constraints. The inclusion of variables on executive constraints and governance forms strengthens the statistical power of the variable of interest to the five percent level. In column 3, I run the regression with a time lag (twice), to tests for a lagging positive effect of having a US/UK educated leader. As depicted, the interaction term is positive and significant at the five percent level. Since the sample size gets reduced due to the lags I run the regression without lags using the same sample to confirm that without lags the variable of interest is negative and statistically significant. The results confirm this to be true.

Hence, robustness checks show that the main findings of the paper remain robust and statistically significant to the inclusion of different control variables. In the next section, I discuss transmission channels and leave it to future research when relevant data becomes available.

8 Discussion on Transmission Channels

The effect of genetic distance on the aid-growth nexus most likely works through certain channels, which affect development of different belief systems (cultures) in different societies. These channels could include the initial environmental conditions and current technological diffusion. In his book "Freedom Rising", Christian Welzel (2013), shows that environmental conditions did matter but mostly before industrial revolution: since then, it has mattered less and less. In present times, technological advancement, its diffusion and, most importantly, the adoption of it by other societies seem to matter most for economic prosperity and cultural change (Spolaore and Wacziarg, 2009; Welzel, 2013).

On the other hand, one can argue that genetic distance is capturing differences in language, ethnicity and religion. I test this by including distance in ethno-linguistic fractionalization between donors and recipients as well as differences in religion, using data from Kolo (2012). I do not find any statistically significant effect of religion, language or ethnic donor-recipient differences on the aid-growth nexus (See appendix B, Table 3).

It can also be possible that genetic distance captures differences in geography. I use a geography control variable from the same RS data in Clemens et al. (2012) and interact it with aid. The interaction term of genetic distance to average donor remains negative and

statistically significant while aid's interaction with recipient geography is positive but statistically insignificant.

This paper, assumes that genetic distance also indirectly transmits information on cultural differences between donors and recipients. Hence, I included the WVS cultural dimension of well-being (Wave 1-2) to see if this dimension can be the transmission channel. The number of observations is reduced to 120 in the panel analysis, and covers 42 countries. Values for missing waves for a country have been imputed using values before and/or after the missing period, since cultural values change very slowly in general. The results are shown in appendix B, Table 4, where one can see that both genetic distance and the well-being dimension are statistically significant, while societies with higher scores of well-being seem to gain from aid more in terms of growth. The coefficient of the genetic distance changes only slightly, and the coefficient of the well-being is statistically significant at ten percent level. This result tentatively suggests that certain cultural values measured by WVS can be part of the transmission channel assumed by this paper.

10 Conclusion

The majority of previous published studies analyze development aid's effects on economic growth with a sole focus on recipient country characteristics. . In contrast, in this paper I look at both donor and recipient culture and analyze how the cultural distance between them can influence aid's effects on growth. I use two measures of cultural transmission based on the theory of Bisin and Verdier (2001). To measure vertical transmission of culture (parent-offspring) I use aid-adjusted genetic distance to average donor to proxy for cultural differences between donors and recipients. To measure horizontal transmission of culture (society), I use western (US/UK) education of chief executives of recipient countries to proxy for cultural similarities between donors and recipients. These two proxies of donor-recipient cultural similarities are then interacted with gross bilateral aid using the extended dataset of Rajan and Subrmanian's (2008) aid-growth model from Clemens et al. (2012).

Findings in this paper suggest that an increase of one standard deviation, 0.5, in Fst genetic distance (co-ancestor coefficient), reduces the effect of aid on growth by 0.2 percentage points. Examination of the effect of the leader’s western education on the growth shows that, in short term, there is a negative and statistically significant effect of US/UK education of a

leader and aid effectiveness. However, since reforms and possible societal changes, promoted by a western educated leadership, need time to materialize, the effect becomes positive and statistically significant when the variable is lagged by two time periods – 10 years. These results are robust to the inclusion of various controls. According to the robustness results in Table 4, a one percentage point increase in aid yields, on average, a 0.3 percentage point increase in growth when a country happens to have had a US/UK educated leader two periods before (10 year).

Future research can help to investigate in detail the channels through which genetic distance and US/UK educated leaders affect the aid-growth nexus. This paper assumes that both can be linked to barriers of communication between populations, which is a sign of cultural differences. Return of a US/UK educated leader to the home country is assumed to be linked to cultural change in the recipient country, which can happen via easier adoption of technologies, innovations and knowledge transfer from donor countries. Extensive survey data on donor-recipient communication and cultural differences could help to address the assumptions of this paper. In future, it would be interesting to include changes in technological adoption rates across countries to test for another possible transmission channel, since data limitations and availability at this stage do not permit rigorous analysis of this part.

In terms of policy implications, the findings show that education in a US or UK is effective when potential leaders return home and work with donor country representatives on development matters. Hence, one option is to keep development as "western-oriented" but intensify cultural exchange between individuals in donor and recipient countries. Giving the negative effect of large cultural difference on aid effectiveness, another option for the donors would be to focus on the culturally close regions and engage in long-term commitments. Particularly, since sub-Saharan Africa is culturally most distant region from western donor perspective, it might be wise to trust its development assistance to a culturally closer donor outside of the western league.

References

Acemoglu, D., Robinson, J., 2012. Why Nations Fail: The Origins of Power, Prosperity, and Poverty, rough cut. ed. Crown Business.

Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S., Wacziarg, R., 2003. Fractionalization. Journal of Economic growth 8, 155–194.

Altaf, S.W., 2011. So much aid, so little development: stories from Pakistan. Woodrow Wilson Center Press ; Johns Hopkins University Press, Washington, D.C.; Baltimore.

Angrist, J.D., Krueger, A.B., 1999. Empirical strategies in labor economics. Handbook of labor economics 3, 1277–1366.

Banks, A.S., 2011. Cross-National Time-Series Data Archive, 1815-[2011].

Bauer, P.T., 1976. Dissent on Development: Studies and Debates in Development Economics, Revised Edition, Revised. ed. Harvard University Press.

Beugelsdijk, S., 2006. A note on the theory and measurement of trust in explaining differences in economic growth. Cambridge Journal of Economics 30, 371–387.

Bisin, A., Verdier, T., 2000. "Beyond the melting pot": cultural transmission, marriage, and the evolution of ethnic and religious traits. The Quarterly Journal of Economics 115, 955–988.

Bisin, A., Verdier, T., 2001. The economics of cultural transmission and the dynamics of preferences. Journal of Economic Theory 97, 298–319.

Bjørnskov, C., 2009. How does social trust affect economic growth? Aarhus Economics Working Paper No. 06-2.

Boone, P., 1996. Politics and the effectiveness of foreign aid. European Economic Review 40, 289–329.

Burnside, C., Dollar, D., 1997. Aid, policies, and growth. World Bank Policy Research Working Paper No. 569252.

Cavalli-Sforza, L.L., 2001. Genes, Peoples, and Languages. University of California Press.

Cavalli-Sforza, L.L.L., Menozzi, P., Piazza, A., 1994. The history and geography of human genes. Princeton university press.

Clemens, M., Bazzi, S., 2009. Blunt instruments: on establishing the causes of economic growth. Center for Global Development Working Paper.

Clemens, M.A., Radelet, S., Bhavnani, R.R., Bazzi, S., 2012. Counting Chickens when they Hatch: Timing and the Effects of Aid on Growth*. The Economic Journal 122, 590–617.

Constant, A., Tien, B.N., 2010. African Leaders: Their Education Abroad and FDI Flows. Deutsches Institut für Wirtschaftsforschung.

Cosmides, L., Tooby, J., 1994. Better than Rational: Evolutionary Psychology and the Invisible Hand. American Economic Review 84, 327–32.

Dalgaard, C.J., Hansen, H., Tarp, F., 2004. On The Empirics of Foreign Aid and Growth*. The Economic Journal 114, F191–F216.

Desmet, K., Le Breton, M., Ortin, I.O., Weber, S., 2007. Stability of nations and genetic diversity. working paper, Universidad Carlos III.

Doucouliagos, H., Paldam, M., 2009. The Aid Effectiveness Literature: The sad results of 40 years of research. Journal of Economic Surveys 23, 433–461.

Dreher, A., Eichenauer, V., Gehring, K., 2013a. Geopolitics, Aid and Growth. unpublished manuscript.

Dreher, A., Jong-A-Pin, R., Yu, S., 2013b. The Alma Mater Effect. Does Foreign Education of Political Leaders Influence Voting Behavior in the United Nations General Assembly?
Dreher, A., Lamla, M.J., Lein, S.M., Somogyi, F., 2009. The impact of political leaders' profession and education on reforms. Journal of Comparative Economics 37, 169–193.
Dreher, A., Minasyan, A., Nunnenkamp, P., 2013c. Government ideology in donor and recipient countries: Does political proximity matter for the effectiveness of aid? Kiel Working Paper.
Easterly, W.R., 2001. The Elusive Quest for Growth : Economists' Adventures and Misadventures in the Tropics. The MIT Press.
Economides, G., Kalyvitis, S., Philippopoulos, A., 2004. Do Foreign Aid Transfers Distort Incentives and Hurt Growth? Theory and Evidence from 75 Aid-recipient Countries (CESifo Working Paper Series No. 1156). CESifo Group Munich.
Escobar, A., 1995. Encountering development: The making and unmaking of development. Princeton: Princeton University Press.
Escobar, A., 2011. Encountering development: The making and unmaking of the Third World. Princeton University Press.
Fishbein, M., Ajzen, I., 1975. Belief, attitude, intention and behavior: an introduction to theory and research.
Gerring, J., Bond, P., Barndt, W.T., Moreno, C., 2005. Democracy and economic growth: A historical perspective. World Politics 57, 323–364.
Gibson, C.C., Andersson, K., Ostrom, E., Shivakumar, S., 2005. The Samaritan's dilemma: the political economy of development aid. Oxford University Press Oxford.
Gilman, N., 2003. Mandarins of the future: Modernization theory in Cold War America. JHU Press.
Gorodnichenko, Y., Roland, G., 2010. Culture, institutions and the wealth of nations. National Bureau of Economic Research.
Gorodnichenko, Y., Roland, G., 2011. Which Dimensions of Culture Matter for Long-Run Growth? The American Economic Review 101, 492–498.
Guiso, L., Sapienza, P., Zingales, L., 2006. Does culture affect economic outcomes? The Journal of Economic Perspectives 20, 23–48.
Guiso, L., Sapienza, P., Zingales, L., 2009. Cultural biases in economic exchange? The Quarterly Journal of Economics 124, 1095–1131.
Hansen, H., Tarp, F., 2001. Aid and growth regressions. Journal of development Economics 64, 547–570.
Hayek, F.A., 1973. LAW, LEGISLATION AND LIBERTY-A NEW STATEMENT OF LIBERAL PRINCIPLES OF JUSTICE AND POLITICAL ECONOMY, V 1-RULES AND ORDER.
Helliwell, J.F., 1994. Empirical Linkages Between Democracy and Economic Growth. British Journal of Political Science 24, 225–248. doi:10.1017/S0007123400009790
Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., McElreath, R., Alvard, M., Barr, A., Ensminger, J., 2005. " Economic man" in cross-cultural perspective: Behavioral experiments in 15 small-scale societies. Behavioral and brain sciences 28, 795–814.
Hofstede, G.H., Hofstede, G., 2001. Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations. Sage Publications, Inc.
Inglehart, R., Baker, W.E., 2000. Modernization, Cultural Change, and the Persistence of Traditional Values. American Sociological Review 65, 19. doi:10.2307/2657288

Inglehart, R., Welzel, C., 2005. Modernization, cultural change, and democracy: The human development sequence. Cambridge Univ Pr.
Kahneman, D., 2013. Thinking, Fast and Slow, Reprint edition. ed. Farrar, Straus and Giroux, New York.
Kolo, P., 2012. New approaches to the dynamics, measurement and economic implications of ethnic diversity. Peter Lang.
Lal, D., 2000. Does modernization require westernization? INDEPENDENT REVIEW-OAKLAND- 5, 5–24.
Lanskoy, M., Areshidze, G., 2008. Georgia's year of turmoil. Journal of democracy 19, 154–168.
Lunch with the FT: Mikheil Saakashvili [WWW Document], n.d. Financial Times. URL http://blogs.ft.com/the-world/2008/04/lunch-with-the-ft-mikheil-saakashvili/ (accessed 6.2.14).
Marchesi, S., Sabani, L., Dreher, A., 2011. Read my lips: the role of information transmission in multilateral reform design. Journal of international economics 84, 86–98.
Moorman, R.H., Blakely, G.L., 1995. Individualism-collectivism as an individual difference predictor of organizational citizenship behavior. Journal of organizational behavior 16, 127–142.
Morris, M.H., Davis, D.L., Allen, J.W., 1994. Fostering Corporate Entrepreneurship: Cross-Cultural Comparisons of the Importance of Individualism Versus Collectivism. J Int Bus Stud 25, 65–89. doi:10.1057/palgrave.jibs.8490849
Moyo, D., 2009. Dead aid: why aid is not working and how there is a better way for Africa. Farrar, Straus and Giroux, New York.
Nizalova, O., Murtazashvili, I., 2012. Exogenous treatment and endogenous factors: Vanishing of omitted variable bias on the interaction term.
North, D.C., 1987. Institutions, Transaction Costs and Economic Growth. Economic Inquiry 25, 419–428. doi:10.1111/j.1465-7295.1987.tb00750.x
Nunn, N., Qian, N., 2012. Aiding conflict: The impact of US Food aid on civil war. National Bureau of Economic Research.
Pemstein, D., Meserve, S.A., Melton, J., 2010. Democratic Compromise: A Latent Variable Analysis of Ten Measures of Regime Type. Political Analysis mpq020. doi:10.1093/pan/mpq020
Radcliffe, S.A., Laurie, N., 2006. Culture and development: taking culture seriously in development for Andean indigenous people. Environment and Planning D 24, 231.
Rajan, R.G., Subramanian, A., 2008. Aid and growth: What does the cross-country evidence really show? The Review of economics and Statistics 90, 643–665.
Rostow, W.W., 1990. The stages of economic growth: A non-communist manifesto. Cambridge University Press.
Schech, S., Haggis, J., 2000. Culture and development: A critical introduction.
Schwartz, S.H., 1994. Beyond individualism/collectivism: New cultural dimensions of values.
Sen, A., 2004. How does culture matter. Culture and public action 37–58.
Spilimbergo, A., 2009. Democracy and foreign education. The American Economic Review 528–543.
Spolaore, E., Wacziarg, R., 2009. The diffusion of development. The Quarterly Journal of Economics 124, 469–529.
Tabellini, G., 2008. Presidential address institutions and culture. Journal of the European Economic Association 6, 255–294.
The Paris Declaration on Aid Effectiveness, 2005.

Turner, T., 1999. Talcott Parsons Reader. John Wiley & Sons, New York.
Wagner, J.A., 1995. Studies of individualism-collectivism: Effects on cooperation in groups. Academy of Management journal 38, 152–173.
Welzel, C., 2013. Freedom Rising: Human Empowerment and the Quest for Emancipation, Auflage: New. ed. Cambridge University Press, New York.

Appendix A: Descriptive Statistics

Table 1, Column 3	observations	mean	std. dev.	min	max
GDP p.c. growth	378	1.55	3.05	-12.30	10.12
Bilateral Aid to GDP	378	3.01	3.87	0.01	26.69
Co-ancestor coefficient(Fst)	378	1.02	0.53	0.06	2.22
Initial GDP p.c. (log)	378	8.12	0.87	5.34	10.27
Multilateral Repayments to GDP	378	0.16	0.30	0.00	2.08
Multilateral aid to GDP	378	1.68	3.07	0.00	19.01
Bilateral repayments to GDP	378	0.30	0.51	0.00	4.16
Initial life expectancy (log)	378	61.68	10.06	36.55	79.41
Openness	378	0.46	0.50	0.00	1.00
Inflation(log)	378	0.31	0.61	0.00	4.19
Initial M2 to GDP	378	5.07	12.92	0.00	105.70
Budget Balance to GDP	378	-0.09	0.51	-5.51	2.35
Revolutions	378	0.26	0.41	0.00	2.60

Table 2, Column 4					
GDP p.c. growth	378	1.55	3.05	-12.30	10.12
Bilateral Aid to GDP	378	3.01	3.87	0.01	26.69
Education in US/UK (leader)	378	0.32	0.42	0.00	1.00
Education abroad (leader)	378	0.62	0.43	0.00	1.00
Education Level (leader)	378	6.16	1.14	3.00	8.00
Initial GDP p.c. (log)	378	8.12	0.87	5.34	10.27
Multilateral Repayments to GDP	378	0.16	0.30	0.00	2.08
Multilateral aid to GDP	378	1.68	3.07	0.00	19.01
Bilateral repayments to GDP	378	0.30	0.51	0.00	4.16
Initial life expectancy (log)	378	61.68	10.06	36.55	79.41
Openness	378	0.46	0.50	0.00	1.00
Inflation(log)	378	0.31	0.61	0.00	4.19
Initial M2 to GDP	378	5.07	12.92	0.00	105.70
Budget Balance to GDP	378	-0.09	0.51	-5.51	2.35
Revolutions	378	0.26	0.41	0.00	2.60

Appendix B: Test for Transmission Channels

Table 3. Test for Transmission Channels: DELF

	(1)	(2)	(3)	(4)	(5)
Co-ancestor coefficient (Fst)	-0.987**	-1.032**	-0.929**	-0.807*	-0.950**
	[0.465]	[0.465]	[0.461]	[0.447]	[0.460]
Bilateral aid/GDP	-0.286	-0.275	0.207	0.02	0.399**
	[0.498]	[1.029]	[0.231]	[1.014]	[0.186]
Bilateral Aid/GDP*Fst	-0.172*	-0.257**	-0.14	-0.241**	-0.213**
	[0.090]	[0.101]	[0.100]	[0.101]	[0.087]
DELF	-0.234				
	[1.107]				
Bilateral Aid/GDP*DELF	0.846				
	[0.559]				
Language		1.56			
		[1.875]			
Bilateral Aid/GDP*Language		0.778			
		[1.132]			
Religion			0.334		
			[0.436]		
Bilateral Aid/GDP*Religion			0.315		
			[0.219]		
Ethnicity				-2.917***	
				[1.070]	
Bilateral Aid/GDP*Ethnicity				0.406	
				[1.138]	
Adj. R-Squared	0.293	0.291	0.294	0.302	0.293
Number of Countries	66	66	66	66	66
Number of Observations	378	378	378	378	378

OLS panel estimation in first differences. Aid variables are lagged once. All regressions include period dummies. Controls are: initial GDP p.c.(log), initial life expectancy(log), openness, inflation(log), initial M2/GDP, budget balance/GDP, revolutions as well as multilateral aid, multilateral and bilateral repayments. Significance levels * p<0.10, ** p<0.05, *** p<0.01.

Table 4. Test for Transmission Channels: Well-being and Authority

	(1)	(2)	(3)
Co-ancestor coefficient (Fst)	-0.177	-0.441	-0.496
	[0.517]	[0.500]	[0.488]
Bilateral aid/GDP	0.72	0.399	0.773**
	[0.520]	[0.386]	[0.373]
Bilateral Aid/GDP*Fst	-0.578***	-0.562***	-0.571***
	[0.185]	[0.180]	[0.188]
Bilateral Aid/GDP*Authority	0.031		
	[0.246]		
Authority	-0.48		
	[0.295]		
Bilateral Aid/GDP*Well-being		0.351*	
		[0.204]	
Well-being		0.203	
		[0.448]	
Adj. R-Squared	0.334	0.329	0.328
Number of Countries	42	42	42
Number of Observations	152	152	152

OLS panel estimation in first differences. Aid variables are lagged once. All regressions include period dummies. Controls are: initial GDP p.c.(log), initial life expectancy(log), openness, inflation(log), initial M2/GDP, budget balance/GDP, revolutions as well as multilateral aid, multilateral and bilateral repayments. Significance levels * p<0.10, ** p<0.05, *** p<0.01.

Appendix C: Maps

Figure 1. Fst genetic distance to average donor (standard-deviation)

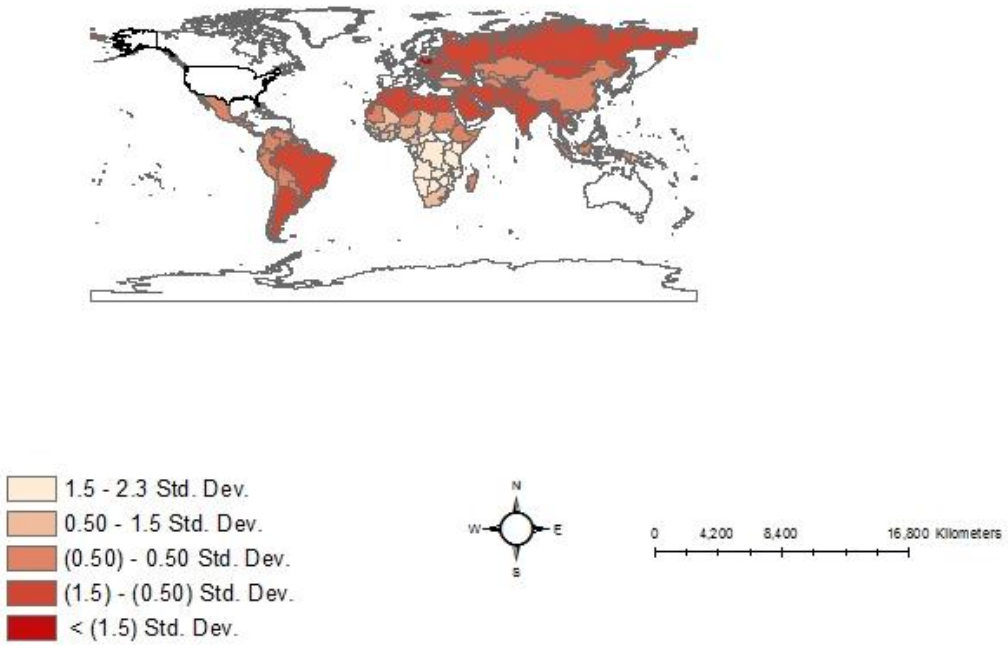


Figure 2. Fst genetic distance to average donor

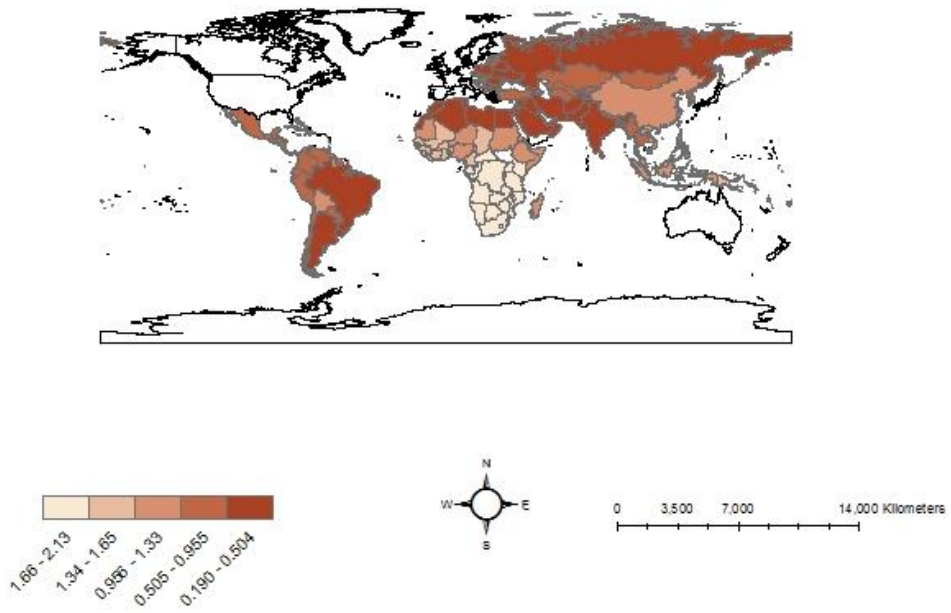
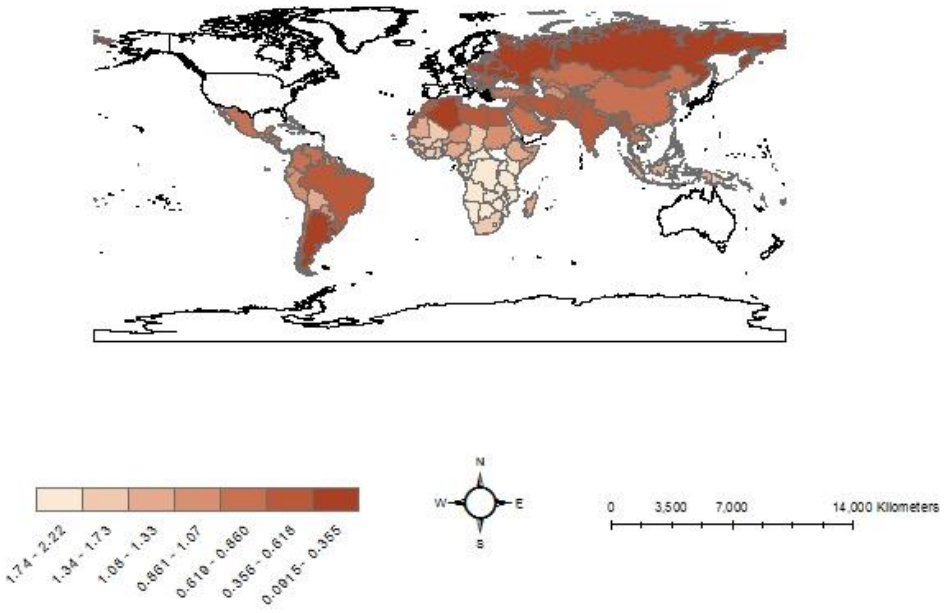


Figure 3. Aid-adjusted Fst genetic distance to average donor



Appendix D. Variable Definition and Sources

Variable	Definition	Sources
Bilateral aid/GDP	Average gross bilateral aid disbursements in percent of GDP.	DAC (2012), Table DAC2a
Coancestor Coefficient/Fst Weighted Genetic Distance	Weighted genetic distance between two populations, time since two populations split apart	Spolaore and Wacziarg (2009)
Leader education abroad	Dummy variable if leader has been educated outside of home country (in the analysis it is a continous variable due to period average).	Dreher et al. (2013b)
Leader education level	Categorial variable on the level of leaders educated stating from illiterate to doctoral level (in the analysis continous variable due to period averages).	Dreher et al. (2013b)
GDP p.c. growth	Average annual growth rate of real GDP p.c. in constant international dollars.	Penn World Table 6.2 and World Bank (2007) for the year 2005*. Penn World Table 7.1 for 2006-2010.
Multilateral aid/GDP	Average gross multialetral disbursementsas percentage of GDP	DAC (2012), Table DAC2a
Multilateral repayments/GDP	Average multilateral repayments as percent of GDP	DAC (2012), Table DAC2a
Bilateral repayments/GDP	Average bilateral repayments as percent of GDP	DAC (2012), Table DAC2a
Initial GDP p.c. (log)	Logarithm of initial GDP p.c. in international prices.	Penn World Table 6.2*, Penn World Table 7.1 for 2006-2010.
Initial life expectancy (log)	Natural logarithm of first non-missing value in each period of total life expectancy.	World Bank (2007)*, World Bank (2012)
Openness	Wacziarg-Welch (2008) extension of the initial Sachs and Warner (1995) openness index, based on black market premium, average tariff rates, export marketing board, socialist regime and etc.	Wacziarg and Welch (2008), updated by Clemens et al. (2012)*. Extension of this index was updated as in Clemens et al. (2012), using Freedom House (2013) and IMF Staff reports for the 2006-2010 period.
Inflation (log)	Natural log of (1+consumer price) inflation.	World Bank (2005, 2007, 2012), IMF (2005), Clemens (2012)*
Initial M2/GDP	Money and quasi-money (M2) to GDP.	World Bank (2007, 2012)*
Budget Balance/GDP	Overall budget balance, including grants. Measured as cash surplus/deficit to GDP.	World Bank (2005, 2007, 2012), IMF (2005), Clemens (2012)*
Revolutions	Average number of revolutions per period.	Banks (2007)*, Banks and Wilson (2012)
Variables for Robustness Checks		
Humanitarian aid	Average humanitarian aid received from all donors as percent of GDP, averaged over the relevant period	DAC (2012), Table DAC2a
Rest bilateral aid	Average gross bilateral aid received from recent DAC member and non-member countries not included in the regressions. (United Arab Emirates, Cyprus, Czech Republic Estonia Hungry Island Israel Kuwait Lithuenia Latvia Poland Romania Slovak Republic Slovenia Thailand Turkey)	DAC (2012), Table DAC2a
Democracy	Continous variable (-2, 2), unified measure of democracy	Pemstein et al. (2013)
Effective Executive	Who is the person exercising primary influence in the shaping of the major decisions affecting the nation's internal and external affairs (Monarch, President Premier Military Other -Communist regimes or ineffective leader)	Banks and Wilson (2012)
Head of State	Who is head of the state (Monarch, Premier, President, Military, Other - hard to identify)	Banks and Wilson (2012)