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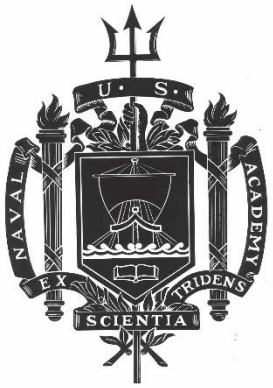
Ancestral Characteristics of Modern Populations and the Effect of Aid on Institutions

by

Midshipman 1/C Cassandra R. Dooley, USN



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14. ABSTRACT

This paper analyzes the impact of foreign aid on institutional quality. While there is no clear definition for institutional quality, we define it to be an average measure of a country's level of democracy, accountability of its government to the populace and ability provide public goods, as well as the government's capacity to enforce the rule of law. The body of prior empirical literature fails to reach a consensus on the impact of aid on institutional quality. The heterogeneous nature of aid is widely recognized, but little understood. We suggest that there are underlying factors correlated with both the probability of receiving aid and aid's effectiveness in promoting institutional quality that may be driving these varied results. Therefore, in order to mitigate and potentially quantify omitted variable bias concerns, we proxy for gender inequality through ancestral characteristics, specifically, the creation of the plow and practice of brideprice. Contemporaneous measures of gender inequality are riddled with problems of reverse causality and endogeneity concerns. The use of historic and unchanging ancestral traits allows us to employ fixed effects to alleviate these issues of reverse causality.
Ancestral characteristics shape contemporary institutions, but accidents of past fortune do not necessarily consign countries to permanent poverty. External assistance, foreign aid, reverses the misfortunes of the past. While contemporary societal characteristics have changed through time, many regions are "stuck" with inherited institutions from their progenitors. By shaping institutions, foreign aid benefits countries whose institutions are rooted in the past. Once underlying factors that can influence the impact of aid on institutional quality are understood, we can then begin to comprehend the true relationship between foreign aid and institutional quality.

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foreign aid, institutions, brideprice, plow

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ANCESTRAL CHARACTERISTICS OF MODERN POPULATIONS AND THE EFFECT OF AID ON INSTITUTIONS

by

Midshipman 1/C Cassandra R. Dooley
United States Naval Academy
Annapolis, Maryland

_____
(signature)

Certification of Adviser(s) Approval

Assistant Professor Alexander F. McQuoid
Economics Department

_____
(signature)

_____
(date)

Associate Professor Ahmed S. Rahman
Economics Department

_____
(signature)

_____
(date)

Professor Katherine A. Smith
Economics Department

_____
(signature)

_____
(date)

Acceptance for the Trident Scholar Committee

Professor Maria J. Schroeder
Associate Director of Midshipman Research

_____
(signature)

_____
(date)

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Abstract

This paper analyzes the impact of foreign aid on institutional quality. While there is no clear definition for institutional quality, we define it to be an average measure of a country's level of democracy, accountability of its government to the populace and ability provide public goods, as well as the government's capacity to enforce the rule of law. The body of prior empirical literature fails to reach a consensus on the impact of aid on institutional quality. The heterogeneous nature of aid is widely recognized, but little understood. We suggest that there are underlying factors correlated with both the probability of receiving aid and aid's effectiveness in promoting institutional quality that may be driving these varied results. Therefore, in order to mitigate and potentially quantify omitted variable bias concerns, we proxy for gender inequality through ancestral characteristics, specifically, the creation of the *plow* and practice of *brideprice*. Contemporaneous measures of gender inequality are riddled with problems of reverse causality and endogeneity concerns. The use of historic and unchanging ancestral traits allows us to employ fixed effects to alleviate these issues of reverse causality.

One may then ask how ancestral creation of the plow and the practice of brideprice relates to contemporaneous gender inequality? Alesina et al. (2011) show that adoption of the plow created the early division of labor along gender lines, which created gender divisions in society that persist today. We propose that countries that created the plow vs. adopted the plow had the resources necessary to sustain a plow economy and have the capacity for stronger economic institutions. Thus, the receipt of foreign aid has the potential to have larger positive effects on institutional quality. The ancestral practice of brideprice altered attitudes towards women in the past by creating a deep rooted view of

women as property. While the ancestral practice of brideprice inclines these societies to have greater gender inequality today, Ashraf et al. (2016) show that the increased value of educated women in the brideprice market can induce spending on female education and incentivize policies that increase female education. Herz and Sperling (2004) show that greater female education is associated with various human capital gains, to include better-educated and more healthy children, more participation of females in the labor force and politics, as well as higher economic productivity of societies. In addition, brideprice also induces saving within societies, as the brideprice represents a significant expenditure of income. Therefore, brideprice societies potentially have a higher productive capacity and may be apt to receive greater institutional quality gains as a result of foreign aid.

Prior literature, most notably Acemoglu et al. (2001), shows that factors rooted in history shape comparative development of institutions. Ancestral characteristics shape contemporary institutions, but accidents of past fortune do not necessarily consign countries to permanent poverty. External assistance, foreign aid, reverses the misfortunes of the past. While contemporary societal characteristics have changed through time, many regions are "stuck" with inherited institutions from their progenitors. By shaping institutions, foreign aid benefits countries whose institutions are rooted in the past. Once underlying factors that can influence the impact of aid on institutional quality are understood, we can then begin to comprehend the true relationship between foreign aid and institutional quality.

Keywords: foreign aid, institutions, brideprice, plow

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1. Introduction

In this paper, we investigate the relationship between societal gender divisions, proxied by deep rooted ancestral characteristics, and the impact of foreign aid on institutional quality. Economic theory suspects foreign aid may improve institutional quality because it has the potential to alleviate financial constraints that are often the primary focus of governments in developing countries. If a country is attempting to overcome issues such as malnutrition, lack of education, or various other problems that inhibit daily life, it will not prioritize institutional quality. Thus, the receipt of foreign aid can help mitigate some of these issues so that a government can make improving their institutions a priority, raising economic growth and welfare. While aid has the potential to have a positive impact on institutional quality, we also see the possibility for negative effects of aid on institutional quality. Many developing countries possess governments that are ineffective or corrupt. Foreign aid given to corrupt government officials may not be used for its intended purpose. Furthermore, foreign aid can also be used by ineffectual governments as a means to perpetuate their power by employing aid funds for bribery and maintaining control as opposed to using foreign aid for the benefit of their citizenry. Theoretically, aid's effect is uncertain.

We define foreign aid to be capital donated from one country to another. Specifically, we will follow Jones and Tarp (2016) and formally measure aid as commitments of Official Development Assistance loans and grants from all donors, including multilateral agencies. While there is not a clear definition for institutional quality, we define it to be an average measure of a country's level of democracy, accountability of its government to the populace and ability provide public goods, as well as the government's capacity to enforce the rule of law. In this paper, institutional quality will be a combined measure of

five different metrics: democracy, checks, executive constraints, political terror, and judicial independence. Democracy captures the level of political rights and civil liberties within a country. Checks counts the number of veto players in a political system. Executive constraints is a measure of institutionalized checks on executive power from "accountability groups," which can take the form of legislatures or any group that has the ability to curb executive power. Judicial independence delineates the degree to which the judicial power in a country is free from outside influence or control. Political terror indicates the protection of human rights within a country.

Understanding the efficacy of foreign aid has gained attention as the magnitude of foreign aid flows have been increasing over time. According to the OECD, development aid reached a new high of $142.6 billion in 2016.[1] Furthermore, we see a positive trend in foreign aid commitments over time.

Source: AidData Version 2.1

[1] Development aid rises again in 2016 but flows to poorest countries dip. (n.d.). Retrieved from http://www.oecd.org/dac/development-aid-rises-again-in-2016-but-flows-to-poorest-countries-dip.htm

On account of the rising worldwide foreign aid flows and its ambiguous effect according to economic theory, understanding the efficacy of foreign aid has gained attention. To find answers, many have turned to empirical studies. Within the empirical literature; however, the results are varied. Jones and Tarp (2016) show foreign aid has a positive effect on institutions and conclude that their findings provide no basis to support the claim that aid has a negative effect on institutional quality. While Jones and Tarp (2016) find a positive relationship between foreign aid and institutional quality, other empirical work suggests the opposite. Bräutigam and Knack (2004) show that in Africa, higher levels of aid are linked with larger declines in both institutional quality and in tax revenues as a share of GDP. Low tax levels as a share of GDP imply that governments may be less accountable to their people and more accountable to potential aid donors, which further hinders the promotion of institutional quality.

Empirically, the answer to aid's effect on institutions remains unclear. We suggest that there are potential country-specific time-invariant factors that are correlated with both the probability of receiving aid and the quality of institutions, which may be driving some of these results. Specifically, we propose that gender differences play a role in the efficacy of aid by improving institutional quality. We theorize that gender inequality fosters imbalanced power structures that inhibit the creation of unified institutions. While gender-imbalanced countries are less adept to solving institutional problems on their own due to divided power structures and contentions among competing groups, this does not necessarily imply that the resource potential for quality institutions is not in place. Gender divisions may distract from countries reaching their institutional capacity, not necessarily a lack of resources or human and physical capital. Thus, the receipt of foreign aid can

potentially force the balancing of power structures and improve institutional quality.

We proxy for societal gender divisions using Ancestral Characteristics of Modern Populations from Giuliano and Nunn (2018), specifically, the ancestral creation of the plow and practice of brideprice. Alesina et al. (2011) suggest that ancestral creation of the plow led to the development of early defined gender roles in society. We theorize that countries that created the plow on their own vs. adopted the plow had the resources necessary to sustain a plow economy and thus have a capacity for stronger economic institutions. Therefore, the receipt of aid has the potential to have larger positive effects on institutional quality, as plow countries can direct their focus on non-economic institutions. Furthermore, foreign aid can be used to allow the framework already in place for strong economic institutions to achieve closer to its productive capacity.

Similar to the gender divide that stemmed from the ancestral creation of the plow, ancestral practice of brideprice is associated with the early development of gender inequality in society. Due to the nature of brideprice, where women are viewed as property to be purchased in a marriage market, negative attitudes towards women tend to be fostered in these societies. Ashraf et al. (2016) show that the practice of brideprice incentivizes contemporary female education, as a more educated bride is considered more valuable in the marriage market. They show that this desire to educate females to increase their worth potentially makes brideprice societies more receptive to policies that increase education. Herz and Sperling (2004) show that greater female education is linked with more educated and healthy societies, greater participation of females in the workforce and political realm, as well as higher economic productivity. Furthermore, the desire to spend a significant amount on a bride incentivizes savings in brideprice societies. We suggest

that the combination of the human capital gains associated with female education and higher savings creates a higher productive capacity for countries with brideprice, which predisposes these societies to reap larger institutional quality benefits from aid.

One might ask why contemporaneous measures of gender inequality are not included in our analysis, such as the percentage of educated women. The answer to this question is two-fold. First, contemporaneous measures are riddled with problems of reverse causality and endogeneity concerns that would make our results highly flawed. Second, our measures of the ancestral practice of brideprice and creation of the plow help us understand what time-invariant factors specifically drive country-fixed effects. Prior literature has shown that factors rooted in history shape comparative development of institutions. Although ancestral characteristics shape contemporary institutions, accidents of past fortune do not consign countries to permanent poverty. We examine whether external assistance can help reverse the misfortunes of the past.

We argue that ancestral characteristics shape ancestral institutions, which, due to path dependence, help form current institutions. While contemporary societal characteristics have changed through time, many regions are "stuck" with inherited institutions from their progenitors. If foreign aid can help shape institutions, countries whose institutions are rooted in the past in ways that do not necessarily represent current society may be more prone to draw institutional benefits from the receipt of aid.

There exists literature, heralded by Jones and Tarp (2016) that demonstrates a relationship between aid and institutions. Given this relationship, we look to identify where foreign aid may be most effective. We theorize that in some areas, institutions are beyond the point of help through the provision of foreign aid, thus aid funds would

essentially be wasted. In other places, institutional reform is possible, and it is only a matter of directing the resources to facilitate positive change. Thus, we look to contribute to prior literature in two ways. First, we establish that when we control for certain country-level ancestral characteristics, the effect of aid on institutional quality goes away. Therefore, we suggest that previous literature suffers from omitted variable bias. Omitted variable bias is highly problematic as it generates both biased and inconsistent estimates. Second, we discover that certain ancestral characteristics, and in this paper specifically, the ancestral practice of brideprice and ancestral creation of the plow, help us predict that aid funds will be most effective in promoting institutional quality when given to societies with gender inequality.

2. Literature Review

Extensive empirical literature currently exists on the relationship between aid and the quality of institutions. While the literature is vast, the results are diverging with some contending that aid has a positive effect on institutional quality, while others argue that it actually hinders institutional quality. These varied results suggest that perhaps there is omitted variable bias present in prior work. We look to account for this by controlling for gender inequality through the inclusion of ancestral characteristics, specifically, the practice of brideprice and creation of the plow. These variables are deeply rooted in history and are shown to create gender divisions that persist to contemporaneous societies. Therefore, if not controlled for, they represent potential omitted variables that other literature fails to account for.

Foreign aid has been shown to have a positive association with institutional quality. One means through which aid inflows can have positive effects on institutions is by releasing governments from binding revenue constraints, which allows them to strengthen institutions and pay higher salaries to civil servants. Bräutigam and Knack (2004) show that governments previously focused on overcoming budget constraints can shift their focus to enforcing property rights and the institutions of law.

In addition to a positive effect on judicial institutions, Tavares (2011) finds that foreign aid decreases corruption, thus improving government institutions. One mechanism Tavares (2011) proposes for this positive result is that foreign aid is linked to a conditionality effect in which rules associated with aid donations limit the discretion of the recipient country's officials. Gibson et al. (2015) corroborate the findings of Tavares and show that post-Cold War, the increased use of technical assistance by donors increased

monitoring and consequently decreased corruption in aid recipient governments. Thus, to remain in power given increased supervision, autocrats ceded political rights to their opponents by legalizing opposition parties and staging elections, thereby improving governance.

Not only does prior literature show a positive effect of aid in lowering government corruption, it also shows that foreign aid can bolster democracy in recipient countries. Knack (2001) shows foreign aid can contribute to democratization through technical assistance by aid donors and an increased focus on electoral processes and the strengthening of checks on government powers.

The benefit of aid is not only limited to positive effects on government institutions. Arndt et al. (2010) demonstrate a positive impact of aid on economic growth by stimulating its proximate determinants in the form of physical and human capital. Specifically, they show an association between increases in years of schooling, investment, life expectancy, and several other metrics. These increases in human and physical capital lend themselves to stronger economic institutions.

While the positives of aid inflows seem compelling, a second branch of the research argues that aid has a negative effect on institutional quality. Djankov et al. (2006) show that foreign aid has a negative and statistically significant effect on changes in democracy. They compare the negative effects of aid to the "natural resource curse." Similar to natural resources that a country is abundantly endowed with, aid can be appropriated by corrupt politicians in a manner that is not contingent on accountability to the governed and the level of democracy within a country. Thus, these flawed governments can acquire government funds necessary to carry out their agenda without having to resort to unpopular

measures of accumulating capital, such as taxation.

Previous literature not only demonstrates a link between aid and corruption, it also shows how the receipt or expectation of aid can potentially alter government incentives. Svensson (2000) shows an increase in government funds does not equate to the provision of more public goods and actually may reduce such provisions. Moss et al. (2006) further the assertion that foreign aid reduces spending on public goods and demonstrate that countries that can raise significant revenues from foreign aid are less accountable to their citizens. As a result, they conclude governments are less likely to have the incentives to invest in improving institutional quality. Busse and Gröning (2009) also convey a negative effect of aid on institutional quality and show that moral hazard problems cause high levels of aid to delay necessary reforms that could enhance governance.

The receipt of foreign aid not only alters incentives of governments to make necessary reforms and has negative effects on democratization, Morrison (2009) shows that aid is similar to oil enterprises in that it allows governments in recipient countries to thwart challenges to power. Morrison (2009) suggests that this greater ability to eliminate opposition decreases the likelihood of regime transition and consequently promotes authoritarianism.

Overall, previous literature shows mixed results on the impact of foreign aid on institutional quality. The variation among these results suggests that there may be an omitted variable issue present. The added value of this paper is to control for gender inequality in society that is captured by deep ancestral factors. The effects of early gender divisions in societies alter contemporaneous attitudes and comparative institutional development, thus encompassing some of the omitted variable bias that may be present in

previous literature.

Potential omitted variable bias stems from underlying country-specific time-invariant factors. Early presence of the plow is linked to the creation of gender roles. Alesina et al. (2011) show that adoption of the plow prompted division of labor and the persistence of gender norms that translate to today's society. They also find that attitudes favoring gender inequality persist and lead to lower female participation in the labor force and politics in modern society.

The practice of brideprice is also associated with the creation of gender divisions. Kaye et al. (2006) contend that the practice of brideprice reduces both the power and prestige of women, thus creating male-dominated societies characterized by inequality along gender lines. Due to the fact that women are considered property and are essentially viewed as goods to be purchased in the marriage market, this lends itself to less household decision-making power for women among brideprice societies. Kaye et al. (2006) also contend that the fear of stigma, the fact that the bride price must be paid back in the event of divorce, and the lack of financial opportunity among women in these societies perpetuates the practice and further contributes to contemporaneous gender inequality.

The ancestral creation of the plow and practice of brideprice contribute to deep rooted societal gender divisions. These gender divisions endure today and may explain some of the variation between countries in the effect of foreign aid on institutional quality. Branisa et al. (2010) show that social institutions related to gender inequality are associated with negative outcomes to human capital in the form of lower female secondary education, higher fertility rates, and higher child mortality. These negative effects are conducive to lower institutional quality, as governments that must focus on solving problems of

malnutrition and poor education cannot direct resources to reforming institutions. Branisa et al. (2010) also show an association between lower government accountability and rule of law and gender inequality. This further implies that the presence of gender divisions may predispose countries that possess the ancestral practice of brideprice and creation of the plow to lower initial institutional quality.

Overall, our contribution to existing literature is two-fold. First, we explain some of the variation in the efficacy of aid on institutions through the use of deep ancestral characteristics of modern populations. While others recognize the heterogeneous effects of aid between countries, they fail to find the source of this heterogeneity. We propose that these changes can be somewhat explained by gender divisions, proxied by ancestral characteristics, specifically, ancestral creation of the plow and the practice of brideprice. By eliminating some of the omitted variable bias present in previous literature, we hope to come closer to answering the question, what is the effect of foreign aid on institutional quality? Can certain countries achieve institutional reform if given the resources necessary to facilitate it?

3. Empirical Methodology

To analyze the relationship between foreign aid and institutional quality, we start with the following general specification, which we employ on panel data for 104 countries between the years 1983 and 2010:

$$IIIIIIIIIIIIIIIIIIIIIIII_{iiii} = \beta\beta_0 + \beta\beta_1 * AAIIAA_{iiii} + \beta\beta_2 * ZZ_{iiii} + \varepsilon\varepsilon_{iiii}$$

Eqn. 1

where $Institutions_{it}$ is a continuous measure of institutions; i indexes countries; t is years; Aid_{it} is a measure of aid commitments (normalized by income); Z_{it} is a vector of control variables; and ε_{it} is residual error.

Endogeneity is a major concern in the analysis of the relationship between foreign aid and institutional quality. As shown in Figure 1, we suggest that there are potential underlying factors that influence both the receipt of foreign aid and institutional quality.

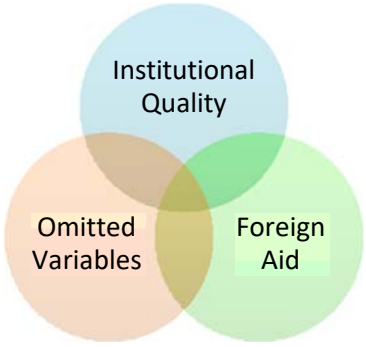


Figure 1

Thus, our base specification consists of the following control variables as denoted in the above equation by the vector, Z: GDP per capita (log.); population size (log.); life expectancy; the share of trade in GDP, which proxies for openness; the share of population resident in urban areas; and a dummy variable indicating whether the

recipient is a net oil or gas exporter.

After evaluating the relationship between foreign aid and institutional quality using OLS specifications, we look to mitigate some of our concerns for omitted variable bias on account of country-specific time-invariant factors. Consequently, we utilize country-fixed effects in order to eliminate the potential influence of these factors and our regression equation becomes the following:

$$IIIIIIIIIIIIIIIIIIIII_{iiii} - \overline{\text{[illegible]}}_{ii} = \delta\delta_1 * (AAIIAA_{iiii} - \overline{\text{[illegible]}}_{ii}) + \delta\delta_2 * (ZZ_{iiii} - \bar{Z}\bar{Z}_i) + (\varepsilon\varepsilon_{iiii} - \bar{\varepsilon}\bar{\varepsilon}_i)$$

Eqn. 2

We see that using country-fixed effects as opposed to OLS causes variations in the magnitude of the effect of aid on institutional quality. Thus, our concerns about potential omitted variable bias remain. As a result, we look to potentially quantify some of the underlying factors influencing our results through the inclusion of controls for societal gender inequality. We proxy for societal gender inequality using the ancestral practice of brideprice and creation of the plow. These factors are both historic and unchanging over time; therefore, we theorize that they could be capturing some of the underlying effects driving our varied results. We employ the following regression equation in order to capture the level effects of these ancestral traits on institutional quality, as well as the impact of their interaction terms with aid on institutional quality:

$$IIIIIIIIIIIIIIIIIIIII_{iiii} = \beta\beta_0 + \beta\beta_1 * AAIIAA_{iiii} + \beta\beta_2 * PPPPIIPP_{ii} + \beta\beta_3 * BBBBIIAABBBBBBBIIBBBB_{ii} + \beta\beta_4 * PPPPIIPP_{ii} * AAIIAA_{iiii} + \beta\beta_5 * BBBBIIAABBBBBBBIIBBBB_{ii} * AAIIAA_{iiii} + \beta\beta_6 * ZZ_{iiii} + \varepsilon\varepsilon_{iiii}$$

Eqn. 3

Interaction terms are used to separately estimate the effects of aid on institutional quality for countries with and without ancestral characteristics. If we can think of these ancestral characteristics as plausibly randomly assigned across countries, then we can

think of the interaction terms as difference-in-difference estimators of aid with a possible causal interpretation that is missing in the standard literature.

Upon analyzing the relationship between societal gender inequality, proxied by ancestral employment of brideprice and creation of the plow, we see that societal gender inequality matters and influences aid's effect on institutional quality. We look to analyze the true impact of aid on institutional quality by controlling for gender differences and using country-fixed effects in order to assuage our apprehension about omitted variable bias. Thus, we employ the equation below:

$$Inst_{it} - \overline{Inst}_i = \delta_1 * (Aid_{it} - \overline{Aid}_i) + \delta_2 * ((Plow_i * Aid_{it}) - \overline{Plow_i * Aid}_i) + \delta_3 * ((Brideprice_i * Aid_{it}) - \overline{Brideprice_i * Aid}_i) + \delta_4 * (Z_{it} - \bar{Z}_i) + (\varepsilon_{it} - \bar{\varepsilon}_i)$$

Eqn. 4

Through our empirical methodology, we seek to explain the variation in the efficacy of aid on institutions. While others recognize the heterogeneous effects of aid between countries, they fail to find the source of this heterogeneity. We attempt to mitigate and quantify potential underlying country-specific factors through our use of fixed effects and the inclusion of controls for societal gender inequality. By controlling for gender inequality, we will answer the question, does gender inequality matter in determining aid's effect on institutional quality? Once we have an understanding of the answer to this question, we will go one step further to understand the true effect of foreign aid on institutional quality and where aid funds may be best allocated in order to receive the most benefits to institutional quality.

4.0 Data

We use three datasets in our main analysis: Ancestral Characteristics of Modern Populations from Giuliano and Nunn (2018), institutional quality data from the Quality of Goverment database, as well as data on foreign aid from version 2.1 of AidData. Data on ancestral characteristics allows us to proxy for societal gender divisions. These traits, specifically the ancestral practice of brideprice and creation of the plow, are country-specific time-invariant factors that are potentially correlated with both the receipt of aid and institutional quality. Therefore, we can employ these traits to analyze if omitted variable bias may be present in prior literature and have a better estimate of the effect of foreign aid on institutional quality. The Quality of Government database is a compilation of refutable data sources, such as the Polity IV and Freedom House databases, and allows us to choose from various measures of institutional quality and examine how they change over time. Due to the varied nature of institutions, the ability to analyze and choose measures that capture different institutions enhances our analysis. AidData version 2.1 allows us to see how aid flows over time are related to both institutional quality and ancestral traits, which are inherent, unchanging qualities of countries. For summary statistics of our data, refer to Table 1.

4.1 Ancestral Characteristics

It is widely recognized in literature that contemporary conditions of underdeveloped nations can be traced back to their earlier history. Furthermore, many of the differences in the comparative development of countries are rooted in colonialism and other potential historical shocks. Data on ancestral characteristics of modern populations for

Table 1
Summary Statistics

Dataset	Variable	Obs	Mean	Std.Dev.	Min	Med	Max
Ancestral Characteristics	Brideprice	211	0.557	0.459	0.000	0.795	1
	Plow	211	0.551	0.465	0.000	0.812	1
Institutional Quality	Institutional Quality	1606	-8.107	98.51	-213.0	-26.61	308.7
	Democracy	1606	-8.294	102.1	-164.0	-20.41	172.0
	Executive Constraints	1552	-8.829	100.8	-148.4	-51.03	143.6
	Political Terror	1580	3.917	98.84	-200.9	-13.57	173.8
	Judicial Independence	1579	-7.530	104.7	-123.5	13.87	151.2
	Checks	1531	-10.15	97.64	-82.35	-24.42	844.5
Aid	Aid/GDP	1606	5.265	8.396	0.000	2.474	122.9
	Economic Aid/GDP	1606	1.421	2.376	0.000	0.5608	21.44
	Government Aid/GDP	1606	0.5252	2.119	0.000	0.0553	36.37
	Other Aid/GDP	1606	3.319	5.984	0.000	1.284	110.7

Source: Giuliano and Nunn (2018), Ancestral Characteristics of Modern Populations, Quality of Government Database, AidData (Version 2.1)

211 countries is drawn from Giuliano and Nunn (2018) at the country-level. Their primary source of data is the Ethnographic Atlas, which is widely used in literature, to include the work of Gennaioli and Rainer (2007), Alesina et al. (2013), and Michalopoulos and Pappaioannou (2013). In order to aggregate pre-industrial ancestral characteristics data at the country level, Giuliano and Nunn (2018) combine ethnographic information for the 1,300 tribal groups in the Ethnographic Atlas with the contemporaneous distribution of around 7,500 language groups at the grid-cell level. They assume that ancestral traits are passed down to future generations in a manner that is correlated with the transmission of language, thus enabling them to link current populations to ancestral tribes through language.

The dataset is a rich portrait of ancestral characteristics, with information collected on 113 different aspects on pre-modern societies. The variables range from economical information such as percent dependence on agriculture and settlement patterns, to cultural information, such as marriage practices like the practice of polygamy, and political variables such as jurisdictional hierarchy over the local community. Many of these variables contain different groups of subcategories that are often reflections of the changing intensity of that variable. In some cases, tribal information did not have clear ordered properties. Each group of a variable represents the fraction of people within a given country whose ancestors fall into a particular variable category. In this paper, we will focus specifically on ancestral creation of the plow and the practice of brideprice for our main regressions.

We create an intensity measure for both the brideprice and plow variables that are intended to represent the degree to which the ancestors of each country practiced brideprice

and created the plow. The plow variable in the original data is broken into three categories: absent(no plow animals), not aboriginal but well established at period of observation, and aboriginal prior to contact. We define our intensity measure to be the percentage of the population in each country whose ancestors created the plow prior to contact.

The brideprice variable is originally separated into seven categories: bride price or wealth, bride service, token bride price, gift exchange (reciprocal), sister or female relative exchanged for bride, absence of consideration, or dowry. To consolidate this variable to a single intensity measure, we create groups based on those that exchange brides for wealth or services and those that do not. As a result, bride price, bride service, and token bride price are combined and constitute what we define to be the brideprice variable. The second group is tribes whose parents do not marry their sons for personal wealth gain. Dowries are given ostensibly to the bride, so we combined the dowry category with no consideration and gift exchange. When we create the respective measures of intensity for ancestral brideprice and the creation of the plow, we find that on average, 45.2% of the people in each country descended from tribes who created the plow, and 67.3% of people in each country had ancestors who practiced brideprice.

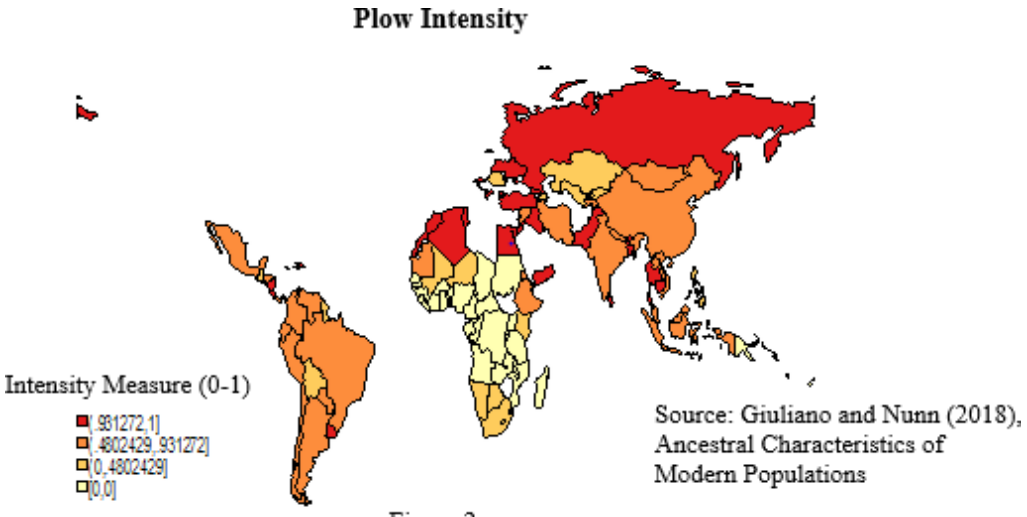


Figure 2

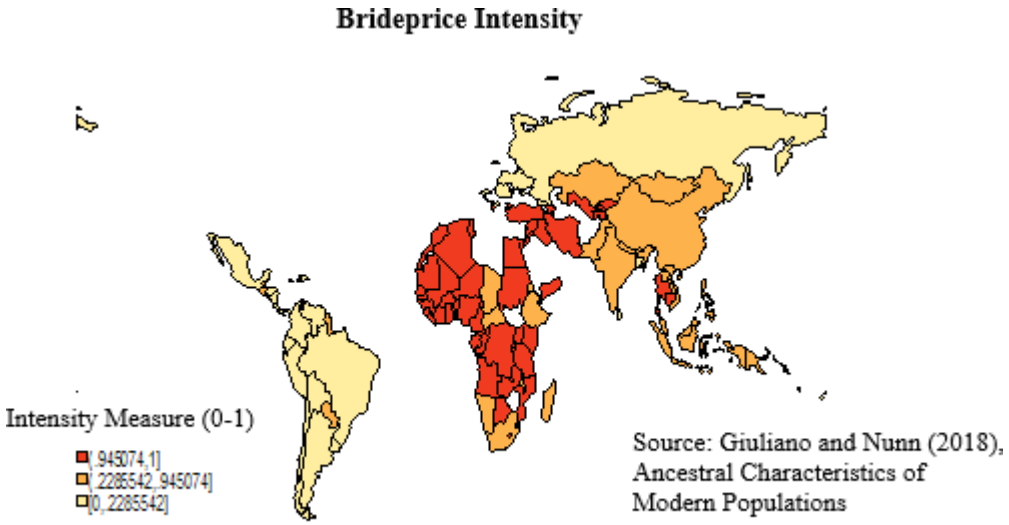


Figure 3

4.2 Institutional Quality

Ancestral characteristics data is then merged with data for 104 countries on institutional quality from the years 1983 to 2010 collected by Jones and Tarp (2016). In their work, to measure institutional quality, they create a single metric that takes into consideration political accountability, the rule of law, government effectiveness, and perceptions of corruption. To measure political institutions, they utilize five indices from the Quality of Government (QoG) database. Most of the data in the Quality of Government database is widely used in academic research, which is an indicator of data quality. The measures they chose within the dataset are: democracy, the number of veto players over political decisions (which they denoted as "checks"), executive constraints, political terror, and judicial independence. With the exception of political terror, which is reversed, the more positive the value of the index, the "better" the outcome is.

Democracy is derived from the Freedom House polity measure and is an average measure of political rights and civil liberties. This measure is widely used in previous

literature, most notably by Djankov et al. (2008) and Alesina and Dollar (2000) in their foreign aid analysis. We see that Iraq, Syria, and Uzbekistan have the worst level of democracy as given by our measure, while Costa Rica, Mauritius, and Jamaica have the highest average level of democracy.

The checks component counts the number of veto players in a political system. Furthermore, this measure accounts for the independence of veto players relative to each other, as determined by the level of electoral competitiveness in a system, their respective party affiliations, and the electoral rules. The checks measure is also widely used in prior literature and featured in the work of Hicken et al. (2005) and Beck et al. (2001). In terms of checks on government power, the data shows that Uzbekistan, Syria, Tunisia, and Iran fare poorly, while India, Papa New Guinea, and the Solomon Islands possess the largest average checks measure.

Executive constraints is a measure of institutionalized checks on executive power from "accountability groups," which can take the form of legislatures or any group that has the ability to curb the power of the executive. This variable is derived from the Polity IV dataset, and is used in many refutable works, to include Besley and Persson (2013). For our executive constraints measure, we see that Iraq, Uzbekistan, and the Ivory Coast have the lowest average, while India, Jamaica, Mauritius, and South Africa display the highest average executive constraints.

Judicial independence represents the degree to which the judicial power in a country is free from outside influence or control. Savun and Tirone (2011) analyze both judicial independence and executive constraints and emphasize the importance of these two measures to the stability of new democracies. As a result, these two institutional

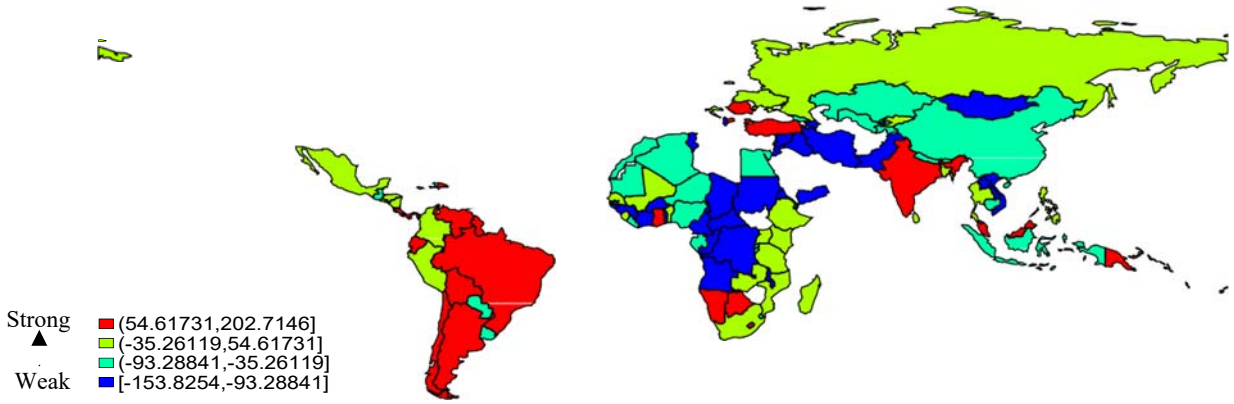
components are often a focus by donor agencies when deciding where to provide funds. We see that Jamaica, Mauritius, Papa New Guinea, Botswana, and Costa Rica have judicial power that is least influenced by outside control as given by our judicial independence measure, while Cambodia, Tajikistan, and Vietnam appear to have judicial institutions that are highly influenced by others.

Finally, political terror is considered an indicator of the protection of human rights within a country. Political terror in this context is important in the fact that it can provide a moral backing or restriction to potential donors. The data used in creating this measure is derived from Amnesty International and the State Department. The scale consists of five levels ranging from countries with secure rule of law to countries whose whole population experiences "terror." According to Gibney and Wood (2010), the Political Terror Scale defines terror to be "state-sanctioned killings, torture, disappearances, and political imprisonment." According to our political terror measure, we see that Iraq, Iran, and Sudan possess the most repressive regimes, while Sao Tome Principe, Costa Rica, and the Solomon Islands had the least restrictive institutions.

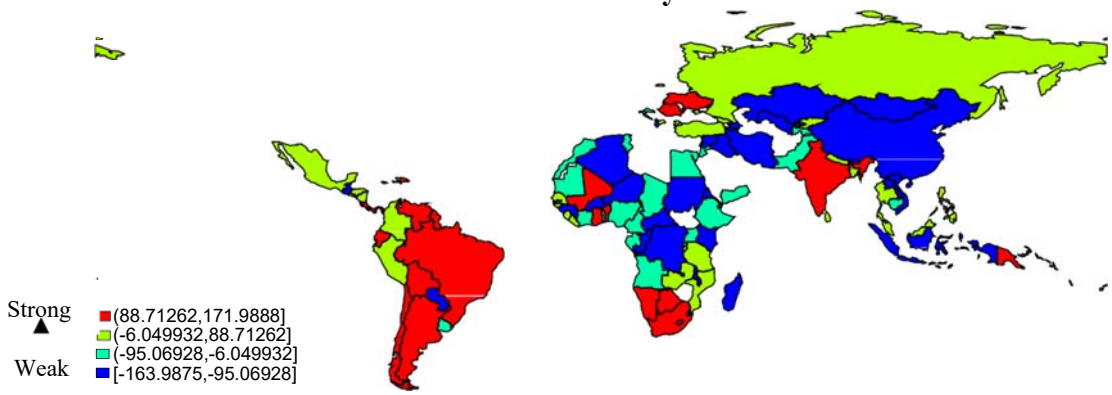
In regression analysis, Jones and Tarp (2016) create a synthetic measure of institutional quality, which is the recipient-level average of all five of their chosen institutional measures. Their synthetic measure ranged from -164.26 to 203.75. For additional summary statistics of the synthetic institutional quality measure and each of its components, refer to Table 1. There were eight countries whose mean synthetic measure of institutional quality fell below -110: Angola, Azerbaijan, Iran, Iraq, Syria, Chad, Uzbekistan, and Vietnam with Iraq. Overall, each individual institutional quality component is widely used in previous literature. Their combination creates a useful

depiction of the overall institutional quality within a country and describe power structures.

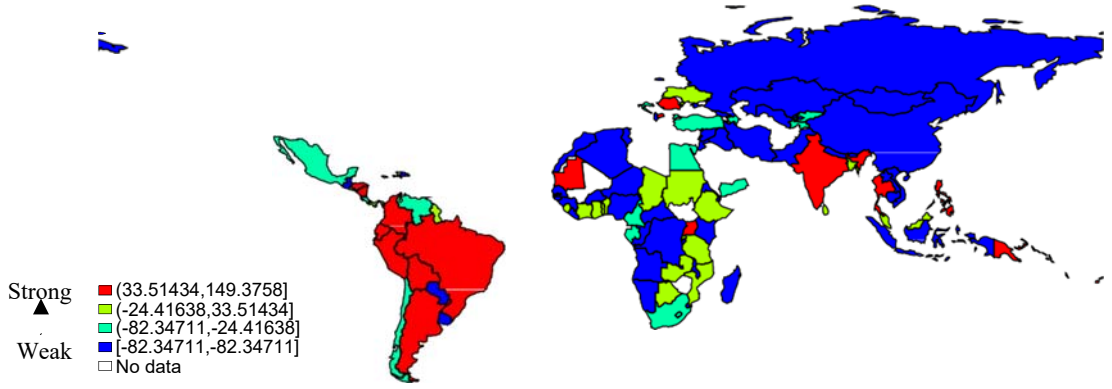
Institutional Quality[2]



Democracy

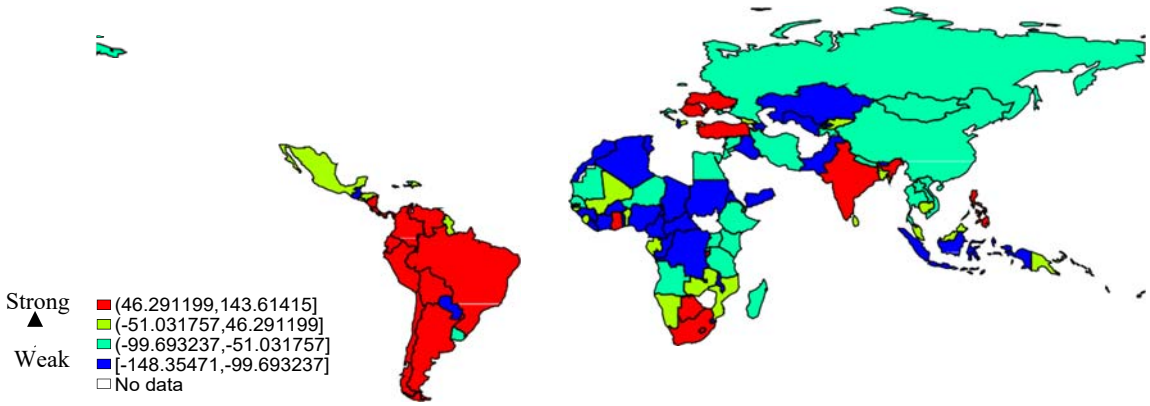


Checks

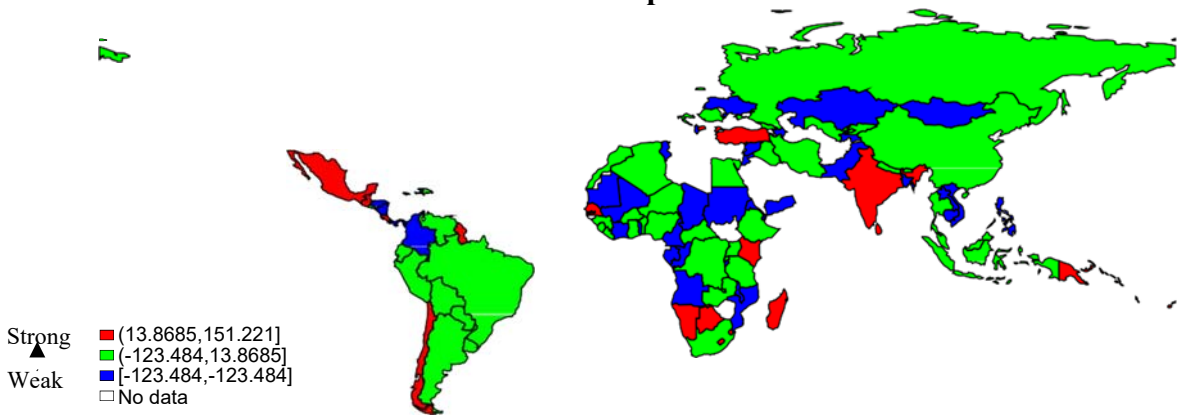


[2] The data used to construct the maps above is derived from the Quality of Government Standard Dataset

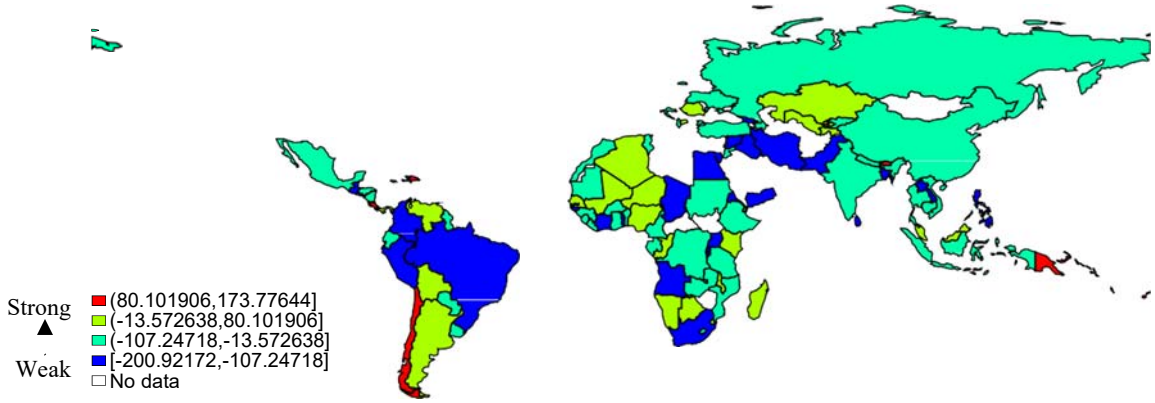
Executive Constraints[3]



Judicial Independence



Political Terror

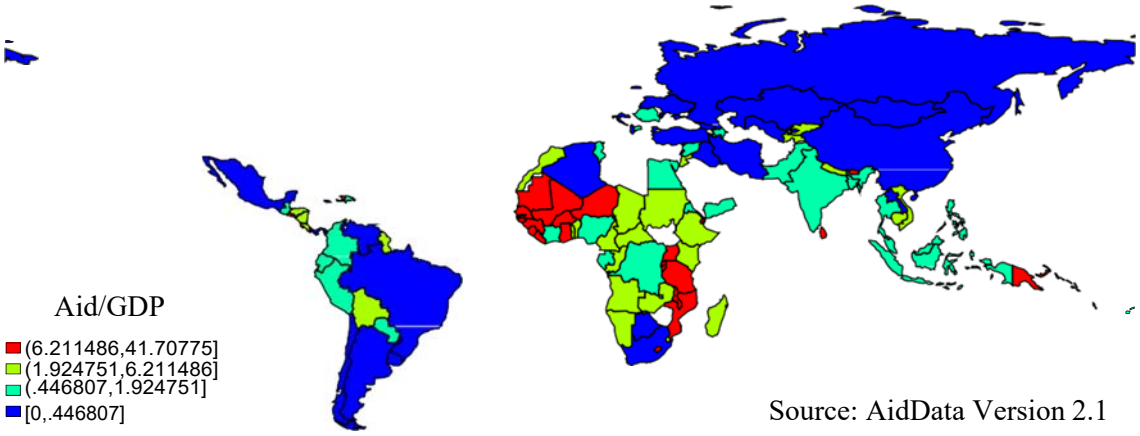


[3] The data used to construct the maps above is derived from the Quality of Government Standard Dataset

4.3 Aid Data

We employ data from version 2.1 of the AidData database to comprise our explanatory aid variables. Following the methodology of Jones and Tarp (2016), we define aid to be commitments of Official Development Assistance loans and grants from all donors, including multilateral agencies, which excludes certain type of funding, such as non-concessional funding and loan guarantees. It is important to note that we use commitments instead of disbursements because purpose-related information is not available for disbursements. To add validity to the use of commitments vice disbursements, Hudson (2013) found that, on average, almost all commitments tend to be met within two years, with most being met immediately. Thus, there is a strong relationship between aid commitments and disbursements at the aggregate level. Country-fixed effects are also utilized in our empirical procedure in order to account for any discrepancies that may result from our use of commitments. We further divide aid into three categories: government, economic, and other aid. This is accomplished through the use of AidData codes, which assign a code to each commitment of aid based on its purpose. We follow the assignment process of Jones and Tarp (2016) in our analysis. Aid values are expressed as a share of GDP in constant international dollars. The comprehensive nature of the AidData database allows us to analyze both foreign aid flows to countries and aid purpose codes and further provide value to this dataset by allowing us to see how the purpose of foreign aid may alter its effect on institutional quality.

Foreign Aid Commitments



Source: AidData Version 2.1

5.0 Results

We look to analyze the effects of societal gender divisions, proxied by deep ancestral characteristics on the efficacy of foreign aid on institutional quality. Specifically, we use the traits of ancestral practice of brideprice and creation of the plow to proxy for gender division. Alesina et al. (2011) and Kaye et al. (2006) show that the presence of the plow and brideprice in the past create gender divisions among societies that persist to modern culture.

5.1 Baseline Regression

Table 1 on the following page reports coefficients from our main panel results for aggregate aid and aggregate institutional quality for an unbalanced panel covering 104 countries between the years 1983 and 2010. Errors are not randomly distributed across all observations and are likely more correlated across countries than within countries because shocks are likely persistent over time. To account for this, we cluster standard errors at country level based on recipient in all models. Using a subset of this data, Jones and Tarp (2016) point to a positive and significant effect of foreign aid on institutional quality. Column 1 of Table 1 shows that the coefficient for aid is positive and significant when estimated via OLS. We also see that the control variable of the recipient country's population has a positive and significant effect on institutional quality and their status as an oil or gas importer has a negative and significant effect, consistent with previous findings.

Table 1
Aggregate Aid and Aggregate Institutions

	1	2	3	4	5	6	7	8
Aid/GDP	2.60***	2.54***	1.64	2.12	0.88**	0.52	2.08**	-0.76
	(0.58)	(0.56)	(1.48)	(2.11)	(0.37)	(0.37)	(0.80)	(1.82)
(Aid/GDP)*Plow		-1.81		-2.05		5.64**		6.47**
		(2.20)		(2.70)		(2.40)		(3.03)
(Aid/GDP)*Brideprice			1.03	0.41			-1.38*	1.40
			(1.69)	(2.34)			(0.83)	(1.92)
Plow		-30.90		-40.24*		-		-
		(22.94)		(20.44)		-		-
Brideprice			-59.69***	-69.58***			-	-
			(20.53)	(22.76)			-	-
GDP p.c.(log.)	48.77***	48.16***	46.32***	45.23***	-0.96	-0.68	-0.75	-0.85
	(11.20)	(11.01)	(11.44)	(11.03)	(17.43)	(17.26)	(17.38)	(17.29)
Life expectancy	2.14**	2.68***	1.86*	2.48**	0.64	0.70	0.64	0.71
	(1.04)	(0.98)	(1.08)	(1.02)	(1.27)	(1.25)	(1.27)	(1.25)
Total trade (%GDP)	0.03	0.02	0.11	0.12	0.40**	0.37**	0.40**	0.37*
	(0.18)	(0.18)	(0.18)	(0.17)	(0.19)	(0.19)	(0.19)	(0.19)
Urbanization	-0.20	-0.22	-0.37	-0.39	1.40	1.35	1.36	1.39
	(0.44)	(0.43)	(0.44)	(0.42)	(1.18)	(1.16)	(1.18)	(1.17)
Oil/gas exporter	-48.17***	-50.48***	-43.62***	-45.90***	-20.93**	-21.66**	-21.09**	-21.60**
	(10.95)	(10.58)	(10.21)	(9.87)	(9.95)	(9.77)	(9.94)	(9.79)
Observations	1445	1445	1445	1445	1445	1445	1445	1445
Number of Countries	104	104	104	104	104	104	104	104
Estimation Type	OLS	OLS	OLS	OLS	Fixed	Fixed	Fixed	Fixed
R^2	0.37	0.38	0.39	0.41	0.09	0.10	0.09	0.11
RMSE	76.46	75.71	75.46	74.27	51.99	51.58	51.97	51.57

Notes: The dependent variable is our synthetic institutional quality measure. Standard errors are clustered based on recipient country and in parentheses (*p<.1), (**p<.05), (***p<.01). Aid/GDP is percentage share of GDP that comes from foreign aid. Brideprice and Plow intensity measures are interacted with Aid/GDP to allow for analysis of subgroups based on these ancestral characteristics. Dashes indicate variables dropped due to collinearity.

6.2 Controlling for Gender Inequality

We are concerned about omitted variable bias stemming from factors not included in regression analysis that are correlated with both the magnitude and probability of foreign aid donation as well as institutional quality. Thus, our unique contribution to prior literature is to fill these gaps by analyzing the effects of societal gender divisions and consequently gender inequality, proxied by the ancestral characteristics of creation of the Plow and practice of Brideprice, on the impact of foreign aid on institutional quality.

Prior literature emphasizes that institutions from the past endure and influence contemporaneous development of societies and cultures. Alesina et al. (2011) show that early adoption of the plow influenced the historical gender division of labor, which persists today and creates greater gender inequality. This inequality comes in the form of lower rates of female participation in the workplace and politics, as well as a higher pervasiveness of attitudes supporting gender divisions. Furthermore, Hague et al. (2011) point to the persistence of the practice of brideprice into today's society. They note that brideprice practices may change in nature in some areas; however, brideprice is extremely common in areas where it was practiced in the past and accepted as the cultural norm.

While previous literature alludes to the heterogeneous nature of the benefit of aid between countries, we look to explain some of this heterogeneity with the inclusion of gender differences captured by ancestral characteristics in our analysis. First, we consider the ancestral practice of brideprice. Kaye et al. (2006) suggest that the ancestral practice of brideprice induces gender division within society due to the fact that women are considered property and are essentially viewed as commodities to be purchased in the marriage market. This view of women lends itself to male-dominated societies with diminished roles for

women. In more recent literature, brideprice has been linked with the prevalence of violence. Hudson et al. (2017) demonstrate that marriage market distortions due to the practice of brideprice can foster violent conflict through incentivizing extra-legal asset accumulation through organized violence and brideprice payment as a potential recruitment tool for terror groups. Countries that experience internal violence are thus more likely to have poor institutional quality. Column 4 of Table 1 shows a negative and significant level effect of ancestral brideprice on institutions and reports a value of-69.58. This equates to .71 standard deviations of our institutional quality measure. To give meaning to the magnitudes of these coefficients, this change is on the order of magnitude of exchanging the institutions of the USA in 2010 with Malaysia's in the same year. This result confirms the findings of prior literature and demonstrates that the ancestral practice of brideprice may predispose countries today to have inherently poor institutions.

Next, we examine the ancestral creation of the plow. Column 4 of Table 1 shows a negative and significant effect of the ancestral creation of the plow on institutional quality with a coefficient of -40.24. This result is consistent with the findings of previous literature. Alesina et al. (2011) show that adoption of the plow influenced early gender division of labor and the persistence of gender norms that predispose descendants of these populations to have less female participation and attitudes supporting gender inequality in present society.

Following our analysis of the effects of each ancestral trait on institutional quality, we looked to see their effect on the coefficient of aid. Column 4 of Table 1 shows that when the ancestral practice of brideprice and creation of the plow are included in the model, the effect of aid on institutional quality is indistinguishable from zero. The change in

significance of the aid coefficient for our model with and without the addition of ancestral traits validates our concern about omitted variable bias.

In order to mitigate our concerns about omitted variable bias, we added fixed effects to our model as a means to mitigate underlying country-specific time-invariant factors. Column 5 of Table 1 shows that the addition of country-fixed effects reduces the effect of aid from our OLS estimate in Column 1. While the effect of aid is still positive and significant, the magnitude is approximately a third of the value of our OLS estimate. This decrease in magnitude of our estimates for country-fixed effects indicates that factors correlated with both the probability of aid and institutional quality may have been driving the findings of previous literature.

Although our country-fixed effects model was able to eliminate a portion of the potential omitted variable bias present in previous work, we looked to further quantify the role of gender inequality on institutional quality by augmenting our fixed effects model with controls for gender differences. Column 8 of Table 1 shows that when gender differences and country-fixed effects are accounted for, foreign aid no longer has a significant effect on institutional quality.

Next, we looked to evaluate the effect of ancestral creation of the plow for our fixed effects model. While our prior results from Column 4 of Table 1 indicate that countries whose ancestors created the plow potentially have lower inherent institutional quality from the start due to greater gender inequality, Table 1 shows that external aid to these countries has positive and significant effects on institutional quality when country-fixed effects are taken into account. Column 8 of Table 1 reports a coefficient of 6.47 for the interaction term between plow creation and aid. Table 1a reports joint tests of significance for

countries with no ancestral characteristics, countries that have ancestral creation of the plow, countries with the ancestral practice of brideprice, and countries with both traits. Table 1a displays a positive and significant value of 5.706 for the joint effect of aid on institutional quality when compared with countries without the ancestral creation of the plow. While our OLS results indicate that countries whose ancestors created the plow potentially have lower inherent institutional quality from the start due to greater gender inequality, Table 1a shows that external aid to these countries has positive and significant effects on institutional quality when country-fixed effects are taken into account.

Table 1a. Interpreting Interactions Between Aid, Plow, and Brideprice Marginal Effects of Aid on Institutions Conditional On:		
	OLS	Fixed Effects
No Plow and No Brideprice ($\hat{\beta}_{aid}$)	2.119 (0.319)	-.7592 (0.678)
Plow and No Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid}$)	0.0645 (0.9749)	5.706*** (0.008)
No Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{brideprice*aid}$)	2.530*** (0.0002)	0.6453* (0.088)
Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid} + \hat{\beta}_{brideprice*aid}$)	0.475 (0.869)	7.111** (0.024)

Notes: The dependent variable is our synthetic institutional quality measure. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of aid for subgroups of countries based on ancestral characteristics.

One possible explanation for this finding is the fact that ancestral creation of the plow implies a need for its use. Countries where the plow was able to be used productively tend to be those abundantly endowed with quality land or resources. Furthermore, the early creation of the plow indicates early development of a more structured plow economy. Thus, we theorize countries whose ancestors created the plow have greater economic capacity, which is not fully expected due to gender bias. When a foreign country provides external aid, these countries can devote aid resources to having their economic institutions reach their capacity, overcoming the institutional trap generated by gender bias.

After seeing the large effect of ancestral creation of the plow on institutional quality for our fixed effects model, we looked to analyze the effect of ancestral brideprice. Table 1a shows a positive and significant joint effect coefficient of 0.6453 for foreign aid on institutional quality for countries who possess the ancestral practice of brideprice relative to countries that do not possess this trait.

A potential reason why countries who possess ancestral brideprice may be receptive to foreign aid is the association between the practice of brideprice and female education. Ashraf et al. (2016) show that parents receive more for their daughter in the bride market if their daughter has more education. Thus, the probability of females being educated is higher in brideprice societies. Furthermore, Ashraf et al. (2016) demonstrate that societies that employ brideprice will likely be more receptive to policies, like school construction, that are aimed at increasing female education, and thus the value of women in the bride market. Furthermore, Herz and Sperling (2004) show that female education is linked with various human capital gains, to include smaller and more sustainable families, healthier children, larger female participation rates in the labor force and politics, as well as higher

economic productivity. We also propose that the practice of brideprice may induce saving, as families spend a significant portion of their income in the bride market. Thus, these countries possess a high productive capacity; however, domestic measures do not have the ability to allow these countries to overcome the institutional trap that results from inherent gender bias. The receipt of external aid can potentially reduce their productive capacity gap and allow countries to achieve greater institutional quality.

Once the effect of each individual ancestral characteristic was known, we looked to investigate how the possession of both ancestral traits impacts the effect of aid on institutional quality. Table 1a shows that for countries whose ancestors both employed brideprice and created the plow, the coefficient for aid is positive and significant with a magnitude 7.111. One possible explanation for the significance of the level effect of the plow on institutions is a compounding of the level effects of the ancestral adoption of the plow and employment of brideprice. There is a plethora of existing literature on vicious cycles in terms of "poverty traps." For example, countries that are poor often have low agricultural production. This low production leads to malnutrition and thus a lack of productivity and low incomes among workers. Therefore, there exists a compounding of negative traits within a country that make it difficult to overcome their "poverty trap."We propose an "institutions trap" of sorts, whereby the ancestral adoption of the plow and brideprice both contribute to greater gender divisions and inequality among societies. Their combined effect leads to inherently more flawed institutions for countries that possess both of these traits. However, we see a larger positive and significant effect of aid on institutions for these countries when compared with those who do not possess these ancestral characteristics. Countries that possess both of these ancestral traits potentially reap the

benefits of both. These benefits come in the form of a higher productive capacity as a result of the plow economy, as well as societies with greater untapped human capital potential rooted in the ancestral practice of brideprice.

Our results from Table 1 overturn the results of prior literature and suggest that foreign aid has different effects on institutional quality depending on gender inequality within a country. The previous literature does not successfully account for potential omitted variable bias in the form of underlying characteristics of a country that not only correlate with the magnitude of aid flows, but institutional quality as well. Our inclusion of measures of gender inequality allows us to isolate and quantify the impacts of aid on institutional quality more accurately.

So far, we have shown that long-lasting institutions and time-invariant factors matter. However, one might be concerned about how aid is measured. We looked to address this concern by looking at disaggregated aid in order to see potential mechanisms by which aid increased institutional quality. Furthermore, we looked to demonstrate what kind of aid provision may be most effective in promoting institutional quality.

5.3 Disaggregated Aid and Institutional Quality

Our results thus far show that gender inequality plays a role in the impact of aggregate aid on institutional quality. We further evaluate the impact of societal divisions by considering different types of aid, as one would think that specific types of aid may be more useful in overcoming gender inequality. Data on foreign aid is derived from Jones et al. (2016) and is sourced from the AidData database (version 2.1; see Tierney et al., 2011). The allocation of aid by purpose is coded in a consistent format, and is grouped by Jones

et al. (2016) into three categories: government, economic, and other aid. Examples of purposes of government aid are donations to government and civil services, as well as support to NGOs or their activities. Economic aid is considered donations for the purpose of transport and storage, communications, business and financial services, agriculture, and banking. Other aid is given by donors with the intent of improving education, women, health, water supply and sanitation, developmental aid, food security, and disaster response.

While aggregate findings are suggestive, the mechanisms and robustness of the findings are not readily apparent. First, we look to evaluate the relationship between government aid and institutional quality. One might think that government aid is the most direct way to influence institutional quality. Earlier aid literature, in particular, Jones et al. (2016), comes to the conclusion that government aid has a positive and significant effect on institutional quality. Table 2 reports coefficients from our main panel results of disaggregated aid on aggregate institutional quality following the same approach as Table 1. Column 1 of Table 2 parallels the results of previous literature and displays that *Government Aid* has a positive and significant effect on institutional quality with a coefficient of 6.30.

Column 4 of Table 2 displays our findings when fixed effects are incorporated. The significance of *Government Aid* is reduced and the effect of *Government Aid* on institutional quality becomes negligible. This result further implies that there are omitted underlying factors that drive the result of previous work and alter the relationship between government aid and institutional quality.

Table 2
Aggregate Institutions and Disaggregate Aid

	1	2	3	4	5	6	7	8
Government Aid/GDP	6.30***	5.76***	-1.89	-7.80	1.20	1.03	-10.80	-13.81*
	(1.26)	(1.32)	(8.91)	(9.62)	(1.72)	(1.52)	(7.56)	(8.13)
Economic Aid/GDP	1.74	1.88	-3.99	2.19	-0.37	-1.64	3.45	-4.89
	(1.69)	(1.72)	(5.05)	(5.38)	(1.31)	(1.48)	(3.60)	(5.27)
Other Aid/GDP	2.25***	2.01**	1.01	0.81	1.11**	0.88**	3.20**	1.27
	(0.84)	(0.78)	(2.05)	(2.36)	(0.44)	(0.41)	(1.44)	(1.16)
Government Aid/GDP*Plow		-14.08		-8.25		21.66*		27.88**
		(11.97)		(10.28)		(12.24)		(12.36)
Economic Aid/GDP*Plow		0.49		-2.29		7.60*		9.48**
		(4.29)		(5.31)		(4.26)		(4.63)
Other Aid/GDP*Plow		1.14		0.85		4.23*		4.17
		(2.34)		(2.82)		(2.31)		(2.78)
Government Aid/GDP*Brideprice			10.89	17.44			15.61	19.44*
			(11.91)	(12.92)			(9.43)	(10.43)
Economic Aid/GDP*Brideprice			6.72	0.24			-4.48	3.51
			(5.69)	(5.91)			(4.39)	(5.81)
Other Aid/GDP*Brideprice			1.02	0.85			-2.40	-0.58
			(2.21)	(2.34)			(1.56)	(1.20)
Plow		-46.08**		-58.28***		-		-
		(20.76)		(20.09)		-		-
Brideprice			-81.55***	-87.73***			-	-
			(17.79)	(16.35)			-	-
Observations	1445.00	1445.00	1445.00	1445.00	1445.00	1445.00	1445.00	1445.00
Number of Countries	104	104	104	104	104	104	104	104
Estimation Type	OLS	OLS	OLS	OLS	Fixed	Fixed	Fixed	Fixed
R^2	0.29	0.32	0.35	0.39	0.09	0.11	0.10	0.12
RMSE	80.88	79.59	77.52	75.29	51.98	51.46	51.86	51.34

Notes: The dependent variable is our synthetic institutional quality measure. Standard errors are clustered based on recipient country and in parentheses (*p<.1), (**p<.05), (***p<.01). Brideprice and Plow intensity measures are interacted with different types of aid's share of GDP to allow for analysis of subgroups based on these ancestral characteristics. Dashes indicate variables dropped due to collinearity.

Table 2a. Interpreting Interactions Between Aid, Plow, and Brideprice Marginal Effects of Aid on Institutions Conditional On:	OLS	Fixed Effects
No Plow and No Brideprice ($\hat{\beta}_{aid}$)		
Government Aid	-7.800	-13.81***
	(0.420)	(0.093)
Economic Aid	2.186	-4.891
	(0685)	(0.355)
Other Aid	0.8068	1.273
	(0.733)	(0.275)
Plow and No Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid}$)		
Government Aid	-16.046	14.074
	(0.190)	(0.250)
Economic Aid	-0.107	4.593
	(0.980)	(0.294)
Other Aid	1.655	5.439**
	(0.478)	(0.0139)
No Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{brideprice*aid}$)		
Government Aid	9.644***	5.629**
	(0.006)	(0.033)
Economic Aid	2.425	-1.384
	(0.186)	(0.388)
Other Aid	1.655**	0.697*
	(.030)	(0.085)
Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid} + \hat{\beta}_{brideprice*aid}$)		
Government Aid	1.398	33.51**
	(0.906)	(0.013)
Economic Aid	0.131	11.10*
	(0.981)	(0.092)
Other Aid	2.503	4.863*
	(0.369)	(0.086)

Notes: The dependent variable is our synthetic institutional quality measure. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of different types of aid for subgroups of countries based on ancestral characteristics.

Once again, we looked to further quantify and assuage our concerns about gender inequality through the inclusion of ancestral characteristics. Column 8 of Table 2 displays the result that with the inclusion of ancestral traits in our model, *Government Aid* has a negative and significant effect on institutional quality for countries that do not possess ancestral characteristics. This result is depicted by a negative coefficient for *Government Aid* of -13.81 and reverses the conclusions drawn from prior literature. One possible mechanism by which this result can occur is that government aid can be a corrupting force in countries with weak governance. Bräutigam and Knack (2004) deduce that high levels of government aid can actually augment government corruption and reduce accountability by essentially imposing fewer internal pressures to improve the state. If revenues depend on aid agencies as opposed to taxes received from the citizens they govern, Bräutigam and Knack (2004) theorize that governments will be less accountable to their citizenry and more reliant on aid donors.

While our results indicate a negative and significant effect of *Government Aid* on institutional quality, we see that this result does not hold for all types of countries. Table 2a shows the joint effect of disaggregated aid types on institutional quality. For countries whose ancestors practiced brideprice, we see a positive and significant coefficient for *Government Aid* of 5.629. Additionally, Table 2a shows that countries whose ancestors both created the plow and practiced brideprice experience a positive and significant effect on institutional quality from the receipt of *Government Aid*, as demonstrated by a coefficient of 33.51. This coefficient of 33.51 represents .34 standard deviations of our institutional quality measure. As explained in our results for aggregate aid, we suggest the practice of brideprice potentially predisposes societies to possess more human capital

potential and a higher savings rate. Societies that are more educated are more likely to have the ability to hold their government accountable when a more gender inclusive norm is adopted. This is because societies with more education have a greater ability to create more effective policy solutions to problems and an enhanced ability to hold their government accountable.

For countries whose ancestors both created the plow and practiced brideprice, when combined with the capacity for economic institutions, the positive effect of government aid is magnified. While government aid is the most direct means, economic growth may lead to higher quality institutions as demonstrated by Aixalá et al. (2009). To the degree economic aid supports economic growth, one might expect a positive impact on institutional quality. However, the results of Table 2a indicate that this may not be the case. Table 2a demonstrates that the joint effects of *Economic Aid* on institutional quality are not statistically distinguishable from zero in all types of countries with the exception of countries whose ancestors practiced brideprice and created the plow. For countries that possess both ancestral traits, Table 2a shows a weakly significant coefficient for *Economic Aid* of 11.10 relative to countries who do not possess any ancestral traits. A possible reason for this result is the fact that countries with these ancestral traits may be relatively more nourished, educated, and productive with a predisposition for stronger economic structures. Thus, the receipt of economic aid can allow these countries to reach a level of economic productivity that is closer to what they have the capacity of producing, thus causing them to potentially receive more benefits to institutional quality.

Lastly, we consider all other types of aid. When one considers means to improve recipient countries, we often think of alleviating problems at their source through more

direct means, such as the donation of government aid to fix problems of governance and economic to mitigate poverty. However, the benefits and positive externalities associated with forms of other aid are often undervalued. Column 1 of Table 2 shows that *Other Aid* has a positive and significant effect on institutional quality with a coefficient of 2.25. Taking into account country-specific time-invariant factors, Column 5 of Table 2 shows that *Other Aid* remains significant; however, the magnitude of the coefficient decreases from 2.25 to 1.11. We then looked to further quantify some of the underlying forces influencing the results of prior literature through controlling for gender inequality.

Next, we looked to see if the inclusion of proxies for gender divisions influenced our results. Table 2a displays the result that *Other Aid* has a positive and significant effect on institutional quality for countries who possess the ancestral creation of the plow, the ancestral practice of brideprice, and both of these traits as seen by *Other Aid* coefficients of 5.439, 0.697, and 4.863 respectively, relative to countries that do not possess either ancestral trait. A potential explanation for the positive and significant effect of *Other Aid* on these countries is the fact that countries whose ancestors created the plow are predisposed to having the capacity for stable economic institutions and countries whose ancestors practiced brideprice likely have more human resource potential. Thus, many of the mechanisms required for institutional quality are in place. Other aid includes donations for the purposes of health and food security. With the inherent advantages incurred from possessing these ancestral characteristics, if populations are healthy and well-fed, these countries are more likely to reach institutional quality capabilities and move past the "institutional trap" threshold that poor health and food security can impose. Furthermore, another interesting use of other aid relates to women. For countries with both

characteristics, gender inequality was a driving force behind the negative level effects of these traits on institutional quality. Thus, other aid can go directly towards alleviating the problems associated with gender divisions that may be holding these countries back.

The analysis of disaggregated aid categories further demonstrates the robustness of our results. Our disaggregated aid results again show the validity of our concerns about underlying time-invariant country-specific factors that are absent in previous aid literature in the form of gender inequality. This is displayed by the disparity across OLS and fixed effects models where *Government Aid* lost its significance and the decreased magnitude of the effect of *Other Aid*. Furthermore, we see gender divisions play a significant role in the benefit a country receives from aid, which is missing from earlier work. Most notably, we see that in traditional OLS specifications, *Government Aid* has a positive and significant effect on institutional quality; however, when gender inequality and fixed effects are taken into account, we see a reversal of these results. Our results indicate that government aid for countries without gender inequality causes aid to have a negative effect on institutional quality. While gender divisions reduce institutional quality overall, Table 2 shows that these negative effects can be overcome through the provision of aid.

An additional implication of our analysis on disaggregated aid is that the type of aid matters. We see that other aid and *Government Aid* seemed to provide a relatively greater benefit to institutional quality than *Economic Aid*. In fact, *Economic Aid* has a negligible effect on institutional quality. Therefore, while a donor often looks to help the institutions of impoverished countries through the direct means of *Economic Aid*, we see that this may not be the best solution to the problem of institutional quality. Perhaps capital given directly to governments or other forms of aid may be the answer. Overall, our results

for disaggregated aid demonstrate that positive institutional reform is possible with the allocation of aid; however, the aid donor must consider both the type of aid being allocated as well as the characteristics of the recipient country in order to increase chances of success.

5.4 Institutional Quality Components Analysis

We next look to further reconcile differences in previous work. Institutional quality can take on many different meanings. Thus, we consider individual components of institutional quality separately and look to demonstrate the relationship between disaggregated aid and the quality of specific types of institutions.

Following the methodology of Jones et al. (2016), we use five components to capture institutional quality: democracy, checks, executive constraints, political terror, and judicial independence. Democracy captures the extent of political rights and civil liberties within a country. The checks component represents the number of actors whose approval is necessary to create policy changes. Executive constraints reflects institutionalized checks on executive decision power. Judicial independence is representative of the extent to which the judicial power in a country is free from outside influence or control. Finally, political terror is an indicator of the protection of human rights within a country. Table 3 reports coefficients from our main panel results for disaggregated aid on disaggregated components of institutional quality using the same procedure as in Tables 1 and 2.

Previous literature has shown that foreign aid can improve levels of democracy within a country. Knack (2004) shows that aid promotes democracy through strengthening political bodies such as legislatures and judiciaries and by improving education and increasing per capita income, which are proven to be components necessary for increasing

Table 3
Institution Index Components and Disaggregated Aid

	Democracy	Executive Constraints	Judicial Independence	Political Terror	Checks
Government Aid/GDP	-34.25***	-26.05***	-5.19	5.46	10.63
	-8.84	-8.95	-8.37	-7.45	-7.46
Economic Aid/GDP	-5.58	-7.31	2.84	2.07	-9.29**
	-6.24	-9	-4.63	-4.73	-3.92
Other Aid/GDP	1.66	0.31	-0.94	0.81	3.55**
	-1.32	-1.64	-2.03	-1.31	-1.41
Government Aid/GDP*Plow	39.22***	36.15**	13.44	10.34	-5.25
	-14.73	-17	-13.28	-12.85	-10.99
Economic Aid/GDP*Plow	12.41**	9.1	3.92	0.75	7.00**
	-5.23	-5.9	-5.57	-4.1	-3.02
Other Aid/GDP*Plow	2.23	2.8	7.56**	2.69	-2.53
	-3.07	-2.84	-3.17	-2.44	-2.19
Government Aid/GDP*Brideprice	43.25***	34.43***	10.9	-6.37	-12.88
	-11.45	-11.9	-11.08	-10.26	-9.91
Economic Aid/GDP*Brideprice	2.84	5.8	-6.32	-0.91	9.92**
	-6.73	-9.1	-5.15	-5.29	-4.17
Other Aid/GDP*Brideprice	-0.74	1.04	0.58	-0.71	-3.01**
	-1.4	-1.7	-1.96	-1.35	-1.51
Observations	1445	1415	1434	1425	1391
Number of Countries	104	102	104	104	103
Estimation Type	Fixed	Fixed	Fixed	Fixed	Fixed
R^2	0.35	0.29	0.21	0.13	0.2
RMSE	49.83	54.84	68.16	60.97	62.71

Notes: The dependent variable in each column is an individual component of institutional quality. Standard errors are in parentheses and clustered by recipient (*p<.1), (**p<.05), (***p<.01). Brideprice and Plow intensity measures are interacted with different types of aid's share of GDP to allow for analysis of subgroups based on these ancestral characteristics.

democratization. Table 3a displays a negative and significant coefficient of -34.25 for *Government Aid*'s effect on democracy for countries that do not possess ancestral characteristics. One possible reason for this negative effect is shown by Djankov et al. (2008), who compare the negative effects of aid to the "natural resource curse." They demonstrate that similar to natural resources with which a country can be abundantly endowed, aid can be appropriated by corrupt politicians in a manner that is not contingent on accountability to the governed and the level of democracy. Thus, these flawed governments can acquire government funds necessary to carry out their agenda without having to resort to unpopular measures.

One would expect *Government Aid* to have the most positive effect on improving democracy relative to other forms of aid as it has the most direct impact on governments. While we saw negative effects of *Government Aid* for countries whose ancestors do not possess ancestral plow and brideprice, we see positive impacts of aid on institutional quality for specific types of countries. Table 3a also shows positive and significant effects for *Government Aid* on democracy for countries whose ancestors practiced brideprice and countries whose ancestors both created the plow and practiced brideprice relative to countries without these traits as displayed by coefficients of 9.00 and 48.22, respectively. Again, we see positive compounding effects for countries that have both ancestral traits.

Although government aid is the most direct means of improving democracy within a country, we also see that the receipt of economic aid can have an impact. Table 3a shows a positive and significant effect of *Economic Aid* on democracy for countries whose ancestors possessed both ancestral traits with a coefficient of 9.66. One possible explanation for this effect is the fact that once these countries receive economic aid, many

of their binding constraints on economic productivity can be overcome, thus improving the health and level of income of the people. This can create a populace that is in a state of well-being in which they can hold their government accountable. Overall, Table 3a validates our main finding that underlying factors, specifically, the ancestral traits of brideprice and creation of the plow, have an impact on the effect of aid on institutional quality. Furthermore, when trying to improve democratic institutions within a country, government aid is the most effective aid type, with the exception of countries without ancestral characteristics, whose level of democracy is actually harmed by the receipt of government aid.

Next, we looked to analyze the relationship between foreign aid and our *checks* component. Previous work shows that foreign aid can improve the institutional component of *checks* by involving more actors in the creation of policies. According to Bräutigam and Knack (2004), aid organizations often provide training and technical assistance to build legal systems and accounting offices necessary to record information about the progress of donated aid funds, thus adding actors that can hold a government accountable to using aid funds in a more effective manner. According to Table 3a, for countries that do not possess ancestral brideprice and creation of the plow, we see a negative and significant coefficient of *Economic Aid* on *checks*. While countries that possess the ancestral practice of brideprice and creation of the plow tend to be divided along gender lines, countries without these ancestral characteristics are often divided based on possession of power and resources. One possible explanation for this result is derived from the work of Djankov et al. (2008) who suggest a negative association between aid and the ability of citizens to hold their government accountable. We see that the receipt of economic aid can potentially promote

an increase in inequality resulting from the capture of political rents by an elite group, who actively attempt to reduce checks in the political system. Table 3a shows a positive and significant effect of *Economic Aid* on institutional *checks* for countries whose ancestors both created the plow and practiced brideprice relative to countries without these traits. An explanation for these results is that the receipt of economic aid allows economic institutions to produce at closer to their inherently higher capacity, reducing gender tensions and economic inequality in these countries. These changes have the ability to potentially diminish the power of elites, who were previously able to carry out their agenda with little accountability.

Although there is a negative effect of *Economic Aid* on the quality of *checks* for countries without ancestral traits, we see that not only does gender inequality matter within a country, but the type of aid provided also matters. Table 3a shows that for countries where gender inequality is not present, *Other Aid* has a positive and significant effect on *checks* with a coefficient of 3.55. An explanation for the benefit to *Other Aid* on *checks* is the fact that other aid tends to be used for the general benefit of society, taking the form of food security, disaster response, health, water supply and sanitation, and funds to meet various other basic needs. Therefore, other aid has the potential to reduce inequality, which re-balances power structures and results in greater checks. If other aid supports greater equality and the good of all citizens, this potentially reduces the power of elites, which may prevent them from undermining checks in the political system.

Table 3a: Marginal Effects of Disaggregated Aid on Institutional Components Conditional On:					
	Judicial Independence	Executive Constraints	Political Terror	Checks	Democracy
No Plow and No Brideprice					
Government Aid	-5.18	-26.05***	5.46	10.63	-34.25***
	(0.537)	(0.004)	(0.465)	(0.157)	(0.000)
Economic Aid	2.84	-7.31	2.07	-9.29**	-5.58
	(0.541)	(0.418)	(0.663)	(0.020)	(0.373)
Other Aid	-0.941	0.307	0.808	3.55**	1.66
	(0.314)	(0.852)	(0.538)	(0.013)	(0.212)
Plow and No Brideprice					
Government Aid	8.26	10.10	15.80	5.37	4.96
	(0.561)	(0.520)	(0.253)	(0.648)	(0.714)
Economic Aid	6.76**	1.79	2.81	-2.29	6.83
	(0.033)	(0.747)	(0.513)	(0.377)	(0.211)
Other Aid	6.62**	3.11	3.49	1.02	3.88
	(0.013)	(0.230)	(0.165)	(0.639)	(0.103)
No Plow and Bridprice					
Government Aid	5.71*	8.38***	-0.91	-2.25	9.00***
	(0.057)	(0.010)	(0.756)	(0.402)	(0.003)
Economic Aid	-11.51***	-1.51	1.16	0.626	-2.75
	(0.009)	(0.474)	(0.418)	(0.650)	(0.102)
Other Aid	-0.358	1.35***	0.1	0.544	0.914
	(0.407)	(0.007)	(0.826)	(0.204)	(0.112)
Plow and Brideprice					
Government Aid	19.16	44.53**	9.43	-7.51	48.22***
	(0.178)	(0.018)	(0.483)	(0.525)	(0.004)
Economic Aid	0.442	7.59	1.9	7.63**	9.66*
	(0.94)	(0.181)	(0.658)	(0.014)	(0.069)
Other Aid	7.2**	4.15	2.79	-1.99	3.14
	(0.025)	(0.148)	(0.250)	(0.371)	(0.314)

Notes: The dependent variable in each column is an individual component of institutional quality. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of different types of aid for subgroups of countries based on ancestral characteristics.

Next, we look to discover a relationship between foreign aid and political terror. According to a report in 2000 by the International Council on Human Rights Policy, aid to countries with poor human rights can have a positive effect; however, if assistance is poorly thought out, it can be harmful. Our results in Table 3a show that all types of aid have a negligible effect on improving political terror, regardless of the level of gender inequality within a country. One potential explanation for this result is that countries that are high on the political terror scale are more repressive in nature, and if given aid, they are not likely to use it for the purpose it was intended. We contend that countries that receive aid and are not repressive in nature will be unchanged in this area by the receipt of aid, because aid utilized by these governments has no need to be allocated toward making their government more inclusive.

Additionally, we consider the effect of aid on executive constraints. The mechanisms for institutional change in executive constraints are very similar to the *checks* institutional component. Executive constraints are in essence a function of societal equality and a measure of checks on an element of power. The receipt of aid has the potential to cause both negative and positive effects on executive constraints: if aid reduces inequality, power structures become more balanced, which results in more constraints on executive power. If aid reduces societal equality and funds fall into the hands of an elite group, this increase in inequality allows corrupt elites in the political system to overcome executive constraints and exert more control.

Similar to our democracy component, government aid is the most direct means to influence executive constraints. Table 3a shows that for countries whose ancestors did not create the plow or practice brideprice, there was a negative and significant coefficient for

Government Aid of -26.05. This value equates to .26 standard deviations of the executive constraints measure. To put this magnitude in perspective, the country average year-to-year variation was 5.12, and 26.05 constitutes over five times this amount.

Despite the negative response for countries whose ancestors did not employ brideprice or create the plow, we see that gender divisions make a difference in aid's effect on executive constraints. Table 3a shows positive and significant effects for *Government Aid* on executive constraints in countries whose ancestors only practiced brideprice relative to countries without ancestral characteristics. Furthermore, Table 3a displays a positive and significant coefficient for *Government Aid* on executive constraints of 44.53 for countries whose ancestors both created the plow and practiced brideprice when compared with countries without ancestral characteristics. This result demonstrates that the possession of both ancestral characteristics seems to magnify the positive effects of aid. We also see that *Government Aid* tends to have the most impact executive constraints. This can be explained by the fact that government aid has the most direct effect on executive constraints, as it is given specifically to recipient governments and NGOs. Thus, governments can be held more accountable by donor countries and agencies. But, this effect only appears to be positive in countries that have ancestral characteristics and as a result, greater gender inequality.

Lastly, we look to analyze the effect of aid on the judicial independence component. Previous literature, in particular, the work of Ariotta et al. (2015) contend that aid donors and recipients have a vested interest in improving judicial independence because it is a means by which improved investment environments can be created that are necessary to support sustained growth. Therefore, foreign aid should bolster judicial independence

within a country. For countries whose ancestors created the plow, we see that *Other Aid* has a positive and significant impact on judicial independence relative to countries without ancestral characteristics. Likewise, we see a positive and significant effect of *Other Aid* with a coefficient of 7.2 on judicial independence for countries whose ancestors both created the plow and practiced brideprice when compared to countries without these traits. This coefficient is slightly larger than that of countries that only possessed the plow, further indicating that the possession of both ancestral traits enhances the positive impact of these ancestral traits on judicial independence.

After this, we looked to evaluate the relationship between *Economic Aid* and judicial independence. For countries whose ancestors only practiced brideprice, Table 3a shows a negative and significant coefficient for *Economic Aid* of -11.51 relative to countries without ancestral characteristics. A potential explanation for this result is the fact that brideprice countries are more likely to be property-oriented countries due to their view of women as property. If given economic aid, the elite members of society who control the government are not incentivized to improve judicial independence, as this institution enforces property rights. If powerful enough, the judicial power within a country could potentially reduce their influence by preventing the corrupt elite members in society from gaining control of resources that are often the source of their power.

In spite of the negative effect of *Economic Aid* on judicial independence in countries that possess ancestral brideprice, we see that *Economic Aid* has a positive and significant joint effect on judicial independence for countries whose ancestors created the plow with a coefficient of 6.76. One possible reason for this positive effect is that the early plow economy likely spawned the idea of property rights and the need to protect them

within plow societies. Therefore, because of the high value placed on property rights within ancestral plow countries, they have a greater likelihood of using external aid resources to improve judicial independence.

We see that different types of institutions respond to different types of aid. The type of aid needed to achieve better institutional quality for democracy is not identical to that required to improve checks. Therefore, when allocating aid, donors must consider their goals and choose the kind of aid that will reach this end. Not only does the type of aid matter for improving certain institutional components, Table 3a also shows that gender inequality within a country impacts the effectiveness of aid. This result further substantiates our argument that prior literature fails to capture the whole story of the effect of aid on institutions, as there are potential underlying factors that influence aid's impact. Gender divisions, proxied by ancestral characteristics, can be used to quantify these factors and give a more accurate depiction of the relationship between aid and institutional quality.

5.5 Robustness Checks

We look to validate our findings through various robustness checks. Tables 4a and 4b report summary statistics for robustness checks of our findings. In order to analyze the robustness of our results, we conducted medium run panel analysis, where the duration of our panel was five years. A random effects model was also included with standard errors clustered by recipient code. Additionally, we included a long differences model using the methodology of Jones et al. (2016), in which they took the difference between the first and last observation for the institutional quality measure and independent variables. Overall, our robustness checks validate our findings above and further demonstrate that gender

inequality has an impact on foreign aid's effectiveness in fostering contemporaneous institutional quality.

Table 4a. Interpreting Interactions Between Aid, Plow, and Brideprice				
Marginal Effects of Aid on Institutions Conditional On:				
	MR OLS	MR FE	RE	LD
No Plow and No Brideprice ($\hat{\beta}_{aid}$)	-0.502	-2.20	-0.108	-1.40
	(0.620)	(0.205)	(0.938)	(0.762)
Plow and No Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid}$)	-2.43	7.05*	4.74**	14.74**
	(0.266)	(0.098)	(0.018)	(0.037)
No Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{brideprice*aid}$)	3.67***	2.18***	0.957***	0.607
	(0.000)	(0.003)	(0.004)	(0.507)
Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid} + \hat{\beta}_{brideprice*aid}$)	1.74	11.43**	5.80**	16.75**
	(0.485)	(0.019)	(0.046)	(0.030)

Notes: The dependent variable is our synthetic institutional quality measure. Each column is represents a different type of specification to give an indication of the robustness of our results. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of aid for subgroups of countries based on ancestral characteristics.

Upon analysis of our results for aggregate aid and aggregate institutions in Table 1a and Table 4a, for countries whose ancestors created the plow and didn't participate in the practice of brideprice, we see a robust relationship across models, as the coefficient for aid is positive and significant relative to countries without ancestral traits for our fixed effects, medium run fixed effects, random effects, and long differences models. A similar result is displayed in Tables 1a and 4a for countries whose ancestors only employed the practice of brideprice, as we see a positive and significant coefficient of aid when compared with countries without ancestral traits across our OLS, fixed effects, medium run OLS, medium run fixed effects, and our random effects models. For countries whose ancestors created the plow and practiced brideprice, the results are likewise robust, as we see a positive and significant coefficient on aid for our fixed effects, medium run fixed effects,

random effects, and long differences models.

The robustness of our results on the effect of aid on institutions was not isolated to aggregate aid and institutions. We saw a similar robustness with disaggregated aid as well. As shown in Tables 2a and 4b, for countries whose ancestors did not practice brideprice or create the plow, we see a negative coefficient of *Government Aid* for OLS, fixed effects, medium run fixed effects, random effects, and long differences models. This coefficient is also significant for our fixed effects and long differences models. Similarly, for *Other Aid*, the coefficient is positive for OLS, fixed effects, medium run fixed effects models, random effects, and long differences, and significant for random effects and long differences models.

For the group of countries whose ancestors created the plow but did not employ brideprice, the results indicate a similar robust relationship. Tables 2a and 4b show that the coefficient for *Other Aid* on institutional quality is positive across all models with the exception of medium run OLS and is significant for fixed effects and random effects models.

Similarly, in countries whose ancestors did not create the plow but utilized the practice of brideprice, Table 2a and Table 4b indicate robust results. Across all models, the coefficient of *Government Aid* on institutional quality is positive, and this coefficient is also significant for OLS, fixed effects, and random effects models. Furthermore, Table 2a and Table 4b show highly robust results in terms of *Other Aid*, as we see a positive and significant effect of *Other Aid* on institutional quality across all six models.

The impact of aid for countries whose ancestors both created the plow and practiced brideprice parallel the robustness of the above results. As shown in Tables 2a and 4b, we

see a positive effect of *Government Aid* on institutional quality across all models except our medium run OLS model. This coefficient is significant across fixed effects, random effects, and long differences models. For *Economic Aid*, Tables 2a and 4b indicate a positive effect of *Economic Aid* on institutional quality across all models except for both OLS models, where the coefficient of *Economic Aid* on institutional quality is negative, but not significant. *Economic Aid* is; however, significant for fixed effects, medium run fixed effects, and long differences models.

The results above display the robustness of our main finding that gender differences, proxied by ancestral characteristics, do play a role in the contemporaneous effect of aid on institutional quality as we see many of the relationships of our primary findings hold up across different specifications. Previous literature recognizes the heterogeneity of aid; however, we have quantified some of the heterogeneity of aid with the inclusion of controls for gender inequality.

Table 4b. Interpreting Interactions Between Aid, Plow, and Brideprice
Marginal Effects of Aid on Institutions Conditional On

	MR OLS	MR FE	RE	LD
No Plow and No Brideprice				
Government Aid	1.27	-15.17	-4.71	-106.8*
	(0.924)	(0.147)	(0.142)	(0.090)
Economic Aid	7.41	-21.62	-0.782	-34.92
	(0.615)	(0.135)	(0.872)	(0.207)
Other Aid	-1.73	0.521	2.26**	24.88*
	(0.313)	(0.618)	(0.037)	(0.068)
Plow and No Brideprice				
Government Aid	-7.09	20.47	6.16	14.11
	(0.709)	(0.352)	(0.575)	(0.779)
Economic Aid	1.63	3.43	4.70	22.21
	(0.860)	(0.762)	(0.272)	(0.429)
Other Aid	-2.67	4.53	4.33**	12.49
	(0.273)	(0.425)	(0.032)	(0.208)
No Plow and Brideprice				
Government Aid	4.20	4.01	6.02**	1.68
	(0.378)	(0.357)	(0.011)	(0.475)
Economic Aid	3.34	-1.08	-1.23	-14.84**
	(0.209)	(0.689)	(0.466)	(0.045)
Other Aid	3.37**	3.30***	0.919**	3.48*
	(0.014)	(0.002)	(0.041)	(0.061)
Plow and Brideprice				
Government Aid	-4.16	39.65	23.89*	122.57**
	(0.842)	(0.133)	(0.052)	(0.033)
Economic Aid	-2.44	23.97**	4.25	42.29**
	(0.825)	(0.048)	(0.374)	(0.025)
Other Aid	2.43	7.30	2.99	-8.91
	(0.344)	(0.202)	(0.233)	(0.456)

Notes: The dependent variable is our synthetic institutional quality measure. Each column is represents a different type of specification to give an indication of the robustness of our results. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of different types of aid for subgroups of countries based on ancestral characteristics.

5.6 Effects of Colonialism

A common practice of previous aid literature is the use of colonialism as an IV. While this practice is common, there is also existing and well-founded literature on the effect of colonialism on institutions today. Acemoglu et al. (2001) argue that colonial institutions persist and influence the comparative development of countries today. The relationship between colonialism and our dependent variable of institutional quality makes colonialism a questionable IV.

We look to analyze the relationship between colonialism and institutional quality. Although colonialism does not meet the exclusion restriction necessary to determine causality, we want to see if controlling for colonialism generates different effects of aid on institutional quality that we saw when gender inequality, proxied by ancestral brideprice and creation of the plow, is included in our analysis. Table 5 reports the marginal effects of colonialism, brideprice, and creation of the plow.

Table 5 shows that the effect of the addition of colonialism for countries is not the same depending on the ancestral characteristics within that country. For countries whose ancestors employed brideprice and did not create the plow, Table 5 demonstrates that without colonialism, aid has a positive and significant effect on institutional quality. With colonialism, aid loses its significance and has a negligible effect on institutional quality. One potential explanation behind this result is the fact that many colonial powers tried to rule their colonies through influencing the elites within a country and ensuring they remained in power. Perhaps the persistence of power in the hands of a few results in a negative effect of aid on institutional quality.

Table 5
Colonialism and Aggregate Aid

	1	2	3	4	5
Aid/GDP	0.88**	1.60**	1.60**	1.61**	1.60**
	(0.37)	(0.72)	(0.71)	(0.72)	(0.71)
(Aid/GDP)*Colony		-1.04	-1.28*	0.59	-0.64
		(0.76)	(0.76)	(1.00)	(1.01)
(Aid/GDP)*Colony*Plow			3.36**		3.22**
			(1.32)		(1.45)
(Aid/GDP)*Colony*Brideprice				-1.98**	-0.74
				(0.88)	(0.84)
(Aid/GDP)*Colony*Plow*Brideprice					-0.92
					(3.75)
Observations	1445	1445	1445	1445	1445
Number of Countries	104	104	104	104	104
Estimation Type	FE	FE	FE	FE	FE
R^2	0.09	0.09	0.10	0.09	0.10
RMSE	51.99	51.95	51.84	51.90	51.87

Notes: The dependent variable is our synthetic institutional quality measure. A dummy variable for whether or not a country was a colony is included and interacted with aid, ancestral plow, and ancestral brideprice. Clustered standard errors are in parentheses (*p<.1), (**p<.05), (***p<.01).

The impact of colonialism is the opposite for countries whose ancestors both created the plow and practiced brideprice. In these countries, we see that if a country with ancestral characteristics was a colony, aid has a positive and significant effect on institutional quality; however, the effect of aid for countries that were not colonized is indistinguishable from zero. One potential explanation of this result is derived from how we coded the plow variable. A country is considered to possess the ancestral plow variable if ancestors within the country created the plow themselves, not if they adopted the plow due to their colonizers giving them the technology. Therefore, this implies that countries whose ancestors created the plow were potentially not as dependent on their colonizers. Thus, these countries are likely more independent and more receptive to improving institutions via aid as opposed to dependent colonies who may be reliant upon persistent colonial institutions.

Our analysis of the impact of colonialism supports our main finding that gender inequality matters in determining the effectiveness of aid on institutional quality. Furthermore, we see that colonialism is a poor instrument for aid. Colonialism does alter the effect of aid on institutional quality for countries with the same ancestral characteristics.

Overall, we see that prior literature may not be capturing the true effect of foreign aid on institutional quality. As can be seen from our results, there are underlying country-specific time-invariant factors that are correlated with both the receipt of foreign aid and institutional quality within a country constituting an omitted variable problem. Some of the effects of these factors were mitigated through the use of fixed effects; however, we show that fixed effects did not fully capture the latent factors that were influencing our results. Our contribution to existing literature is that we show gender inequality, proxied by

ancestral traits, helps to quantify some of these underlying factors and plays a role in the effect of aid on institutional quality. Not only do we see that gender inequality within a country has an impact on the effect of aid, the type of aid matters. We show that different types of aid have different effects on institutional quality for countries based on the ancestral characteristics within that country. Furthermore, we see that the goal of aid must be considered when deciding which type to allocate to a country. Particular kinds of aid effect components of institutional quality in different ways. For example, while government aid may be helpful in improving the democracy and executive constraints within a country, government aid may be essentially useless in helping improve the judicial independence within that same country. Thus, improved institutional quality through the receipt of foreign aid is possible, but, in order to reap these benefits, donors must be aware of the characteristics within a country and the corresponding type of aid that will best meet their goals. We also show that the use of colonialism as an IV in prior literature is problematic.

6. Conclusions

In this paper, we investigate the relationship between aid and institutions. Varied results of prior empirical literature suggest omitted variable bias may be present. We see through our use of fixed effects that our concern is legitimate, as the effect of aid is reduced when country-specific traits are controlled for. To explain some of the potential underlying factors driving previous results, we control for societal gender divisions, proxied by deep rooted ancestral characteristics, and analyze the impact of foreign aid on institutional quality. Ancestral brideprice and creation of the plow are deeply rooted in history and do not change over time. Thus, these traits lend themselves to use in fixed effects specifications and are not riddled by endogeneity concerns that characterize contemporaneous measures of gender inequality. Factors rooted in history shape comparative development of institutions. Although ancestral characteristics shape modern institutions, we see that incidents of the past do not relegate countries to perpetual poverty. Foreign aid provided from an external source can be used to ameliorate poor institutions grounded in the past.

We argue that ancestral characteristics shape ancestral institutions, which due to path dependence help form current institutions. We show that the presence of societal gender inequality has a negative level effect on institutional quality. If foreign aid can help shape institutions, countries whose institutions are rooted in the past in ways that do not necessarily represent current society may be more prone to draw institutional benefits from the receipt of aid.

While gender divisions hinder contemporaneous institutional quality, we demonstrate that foreign aid received by these countries has a more positive effect on institutional

quality relative to countries without gender inequality. This is a result of higher production capacity for countries with inherent gender inequality.

We see that prior literature may not be capturing the true effect of foreign aid on institutional quality. As can be seen from our results, there are underlying county-specific time-invariant factors that are correlated with both the receipt of foreign aid and institutional quality within a country. Through the inclusion of fixed effects, we are able to mitigate some of the latent factors that are influencing our results.

Our main contribution to existing literature is that we show gender inequality, proxied by ancestral traits, helps to quantify some of these latent factors and plays a role in the effect of aid on institutional quality. We see that the effect of foreign aid on institutional quality varies based on the ancestral characteristics present within a country. Not only do we see that gender inequality within a country has an impact on the effect of aid, the type of aid also matters. We demonstrate that different types of aid have different effects on institutional quality for countries based on inherent gender inequality. Furthermore, we see that the goal of aid must be considered when deciding what type of aid to allocate to a country. Particular kinds of aid effect components of institutional quality in different ways. Thus, foreign aid funds have the potential to generate institutional reform if strategically allocated based on the characteristics of the country itself, the type of aid donated, as well the goals of foreign aid provision.

Overall, we show that gender inequality, proxied by ancestral characteristics, impacts the effect of foreign aid on institution quality. We propose that the mechanism for this relationship lies in path dependence, as ancestral institutions shape contemporaneous institutions. While countries with inherent gender inequality have poor initial institutional

quality, we see that they have a high productive capacity. Thus, the receipt of aid can have reap larger institutional benefits and be the impetus necessary to allow them to reduce their productive gap and achieve the institutional quality that they are capable of.

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Appendix A: Summary Statistics

Table 1
Summary Statistics

Dataset	Variable	Obs	Mean	Std.Dev.	Min	Med	Max
Ancestral Characteristics	Brideprice	211	0.557	0.459	0.000	0.795	1
	Plow	211	0.551	0.465	0.000	0.812	1
Institutional Quality	Institutional Quality	1606	-8.107	98.51	-213.0	-26.61	308.7
	Democracy	1606	-8.294	102.1	-164.0	-20.41	172.0
	Executive Constraints	1552	-8.829	100.8	-148.4	-51.03	143.6
	Political Terror	1580	3.917	98.84	-200.9	-13.57	173.8
	Judicial Independence	1579	-7.530	104.7	-123.5	13.87	151.2
	Checks	1531	-10.15	97.64	-82.35	-24.42	844.5
Aid	Aid/GDP	1606	5.265	8.396	0.000	2.474	122.9
	Economic Aid/GDP	1606	1.421	2.376	0.000	0.5608	21.44
	Government Aid/GDP	1606	0.5252	2.119	0.000	0.0553	36.37
	Other Aid/GDP	1606	3.319	5.984	0.000	1.284	110.7

Appendix B: Results Tables

Table 1
Aggregate Aid and Aggregate Institutions

	1	2	3	4	5	6	7	8
Aid/GDP	2.60***	2.54***	1.64	2.12	0.88**	0.52	2.08**	-0.76
	(0.58)	(0.56)	(1.48)	(2.11)	(0.37)	(0.37)	(0.80)	(1.82)
(Aid/GDP)*Plow		-1.81		-2.05		5.64**		6.47**
		(2.20)		(2.70)		(2.40)		(3.03)
(Aid/GDP)*Brideprice			1.03	0.41			-1.38*	1.40
			(1.69)	(2.34)			(0.83)	(1.92)
Plow		-30.90		-40.24*		-		-
		(22.94)		(20.44)		-		-
Brideprice			-59.69***	-69.58***			-	-
			(20.53)	(22.76)			-	-
GDP p.c.(log.)	48.77***	48.16***	46.32***	45.23***	-0.96	-0.68	-0.75	-0.85
	(11.20)	(11.01)	(11.44)	(11.03)	(17.43)	(17.26)	(17.38)	(17.29)
Life expectancy	2.14**	2.68***	1.86*	2.48**	0.64	0.70	0.64	0.71
	(1.04)	(0.98)	(1.08)	(1.02)	(1.27)	(1.25)	(1.27)	(1.25)
Total trade (%GDP)	0.03	0.02	0.11	0.12	0.40**	0.37**	0.40**	0.37*
	(0.18)	(0.18)	(0.18)	(0.17)	(0.19)	(0.19)	(0.19)	(0.19)
Urbanization	-0.20	-0.22	-0.37	-0.39	1.40	1.35	1.36	1.39
	(0.44)	(0.43)	(0.44)	(0.42)	(1.18)	(1.16)	(1.18)	(1.17)
Oil/gas exporter	-48.17***	-50.48***	-43.62***	-45.90***	-20.93**	-21.66**	-21.09**	-21.60**
	(10.95)	(10.58)	(10.21)	(9.87)	(9.95)	(9.77)	(9.94)	(9.79)
Observations	1445	1445	1445	1445	1445	1445	1445	1445
Number of Countries	104	104	104	104	104	104	104	104
Estimation Type	OLS	OLS	OLS	OLS	Fixed	Fixed	Fixed	Fixed
R^2	0.37	0.38	0.39	0.41	0.09	0.10	0.09	0.11
RMSE	76.46	75.71	75.46	74.27	51.99	51.58	51.97	51.57

Notes: The dependent variable is our synthetic institutional quality measure. Standard errors are clustered based on recipient country and in parentheses (*p<.1), (**p<.05), (***p<.01). Aid/GDP is percentage share of GDP that comes from foreign aid. Brideprice and Plow intensity measures are interacted with Aid/GDP to allow for analysis of subgroups based on these ancestral characteristics. Dashes indicate variables dropped due to collinearity.

Table 1a. Interpreting Interactions Between Aid, Plow, and Brideprice Marginal Effects of Aid on Institutions Conditional On:		
	OLS	Fixed Effects
No Plow and No Brideprice ($\hat{\beta}_{aid}$)	2.119	-.7592
	(0.319)	(0.678)
Plow and No Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid}$)	0.0645	5.706***
	(0.9749)	(0.008)
No Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{brideprice*aid}$)	2.530***	0.6453*
	(0.0002)	(0.088)
Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid} + \hat{\beta}_{brideprice*aid}$)	0.475	7.111**
	(0.869)	(0.024)

Notes: The dependent variable is our synthetic institutional quality measure. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of aid for subgroups of countries based on ancestral characteristics.

Table 2
Aggregate Institutions and Disaggregate Aid

	1	2	3	4	5	6	7	8
Government Aid/GDP	6.30***	5.76***	-1.89	-7.80	1.20	1.03	-10.80	-13.81*
	(1.26)	(1.32)	(8.91)	(9.62)	(1.72)	(1.52)	(7.56)	(8.13)
Economic Aid/GDP	1.74	1.88	-3.99	2.19	-0.37	-1.64	3.45	-4.89
	(1.69)	(1.72)	(5.05)	(5.38)	(1.31)	(1.48)	(3.60)	(5.27)
Other Aid/GDP	2.25***	2.01**	1.01	0.81	1.11**	0.88**	3.20**	1.27
	(0.84)	(0.78)	(2.05)	(2.36)	(0.44)	(0.41)	(1.44)	(1.16)
Government Aid/GDP*Plow		-14.08		-8.25		21.66*		27.88**
		(11.97)		(10.28)		(12.24)		(12.36)
Economic Aid/GDP*Plow		0.49		-2.29		7.60*		9.48**
		(4.29)		(5.31)		(4.26)		(4.63)
Other Aid/GDP*Plow		1.14		0.85		4.23*		4.17
		(2.34)		(2.82)		(2.31)		(2.78)
Government Aid/GDP*Brideprice			10.89	17.44			15.61	19.44*
			(11.91)	(12.92)			(9.43)	(10.43)
Economic Aid/GDP*Brideprice			6.72	0.24			-4.48	3.51
			(5.69)	(5.91)			(4.39)	(5.81)
Other Aid/GDP*Brideprice			1.02	0.85			-2.40	-0.58
			(2.21)	(2.34)			(1.56)	(1.20)
Plow		-46.08**		-58.28***		-		-
		(20.76)		(20.09)		-		-
Brideprice			-81.55***	-87.73***			-	-
			(17.79)	(16.35)			-	-
Observations	1445.00	1445.00	1445.00	1445.00	1445.00	1445.00	1445.00	1445.00
Number of Countries	104	104	104	104	104	104	104	104
Estimation Type	OLS	OLS	OLS	OLS	Fixed	Fixed	Fixed	Fixed
R^2	0.29	0.32	0.35	0.39	0.09	0.11	0.10	0.12
RMSE	80.88	79.59	77.52	75.29	51.98	51.46	51.86	51.34

Notes: The dependent variable is our synthetic institutional quality measure. Standard errors are clustered based on recipient country and in parentheses (*p<.1), (**p<.05), (***p<.01). Brideprice and Plow intensity measures are interacted with different types of aid's share of GDP to allow for analysis of subgroups based on these ancestral characteristics. Dashes indicate variables dropped due to collinearity.

Table 2a. Interpreting Interactions Between Aid, Plow, and Brideprice Marginal Effects of Aid on Institutions Conditional On:	OLS	Fixed Effects
No Plow and No Brideprice ($\hat{\beta}_{aid}$)		
Government Aid	-7.800	-13.81***
	(0.420)	(0.093)
Economic Aid	2.186	-4.891
	(0685)	(0.355)
Other Aid	0.8068	1.273
	(0.733)	(0.275)
Plow and No Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid}$)		
Government Aid	-16.046	14.074
	(0.190)	(0.250)
Economic Aid	-0.107	4.593
	(0.980)	(0.294)
Other Aid	1.655	5.439**
	(0.478)	(0.0139)
No Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{brideprice*aid}$)		
Government Aid	9.644***	5.629**
	(0.006)	(0.033)
Economic Aid	2.425	-1.384
	(0.186)	(0.388)
Other Aid	1.655**	0.697*
	(.030)	(0.085)
Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid} + \hat{\beta}_{brideprice*aid}$)		
Government Aid	1.398	33.51**
	(0.906)	(0.013)
Economic Aid	0.131	11.10*
	(0.981)	(0.092)
Other Aid	2.503	4.863*
	(0.369)	(0.086)

Notes: The dependent variable is our synthetic institutional quality measure. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of different types of aid for subgroups of countries based on ancestral characteristics.

Table 3
Institution Index Components and Disaggregated Aid

	Democracy	Executive Constraints	Judicial Independence	Political Terror	Checks
Government Aid/GDP	-34.25***	-26.05***	-5.19	5.46	10.63
	(8.84)	(8.95)	(8.37)	(7.45)	(7.46)
Economic Aid/GDP	-5.58	-7.31	2.84	2.07	-9.29**
	(6.24)	(9.00)	(4.63)	(4.73)	(3.92)
Other Aid/GDP	1.66	0.31	-0.94	0.81	3.55**
	(1.32)	(1.64)	(2.03)	(1.31)	(1.41)
Government Aid/GDP*Plow	39.22***	36.15**	13.44	10.34	-5.25
	(14.73)	(17.00)	(13.28)	(12.85)	(10.99)
Economic Aid/GDP*Plow	12.41**	9.1	3.92	0.75	7.00**
	(5.23)	(5.90)	(5.57)	(4.10)	(3.02)
Other Aid/GDP*Plow	2.23	2.8	7.56**	2.69	-2.53
	(3.07)	(2.84)	(3.17)	(2.44)	(2.19)
Government Aid/GDP*Brideprice	43.25***	34.43***	10.9	-6.37	-12.88
	(11.45)	(11.90)	(11.08)	(10.26)	(9.91)
Economic Aid/GDP*Brideprice	2.84	5.8	-6.32	-0.91	9.92**
	(6.73)	(9.10)	(5.15)	(5.29)	(4.17)
Other Aid/GDP*Brideprice	-0.74	1.04	0.58	-0.71	-3.01**
	(1.40)	(1.7)	(1.96)	(1.35)	(1.51)
Observations	1445	1415	1434	1425	1391
Number of Countries	104	102	104	104	103
Estimation Type	Fixed	Fixed	Fixed	Fixed	Fixed
R^2	0.35	0.29	0.21	0.13	0.2
RMSE	49.83	54.84	68.16	60.97	62.71

Notes: The dependent variable in each column is an individual component of institutional quality. Standard errors are in parentheses and clustered by recipient (*p<.1), (**p<.05), (***p<.01). Brideprice and Plow intensity measures are interacted with different types of aid's share of GDP to allow for analysis of subgroups based on these ancestral characteristics.

Table 3a. Interpreting Interactions Between Aid, Plow, and Brideprice
Marginal Effects of Disaggregated Aid on Institutional Components Conditional On:

	Judicial Independence	Executive Constraints	Political Terror	Checks	Democracy
No Plow and No Brideprice					
Government Aid	-5.18	-26.05***	5.46	10.63	-34.25***
	(0.537)	(0.004)	(0.465)	(0.157)	(0.000)
Economic Aid	2.84	-7.31	2.07	-9.29**	-5.58
	(0.541)	(0.418)	(0.663)	(0.020)	(0.373)
Other Aid	-0.941	0.307	0.808	3.55**	1.66
	(0.314)	(0.852)	(0.538)	(0.013)	(0.212)
Plow and No Brideprice					
Government Aid	8.26	10.10	15.80	5.37	4.96
	(0.561)	(0.520)	(0.253)	(0.648)	(0.714)
Economic Aid	6.76**	1.79	2.81	-2.29	6.83
	(0.033)	(0.747)	(0.513)	(0.377)	(0.211)
Other Aid	6.62**	3.11	3.49	1.02	3.88
	(0.013)	(0.230)	(0.165)	(0.639)	(0.103)
No Plow and Bridprice					
Government Aid	5.71*	8.38***	-0.91	-2.25	9.00***
	(0.057)	(0.010)	(0.756)	(0.402)	(0.003)
Economic Aid	-11.51***	-1.51	1.16	0.626	-2.75
	(0.009)	(0.474)	(0.418)	(0.650)	(0.102)
Other Aid	-0.358	1.35***	0.1	0.544	0.914
	(0.407)	(0.007)	(0.826)	(0.204)	(0.112)
Plow and Brideprice					
Government Aid	19.16	44.53**	9.43	-7.51	48.22***
	(0.178)	(0.018)	(0.483)	(0.525)	(0.004)
Economic Aid	0.442	7.59	1.9	7.63**	9.66*
	(0.94)	(0.181)	(0.658)	(0.014)	(0.069)
Other Aid	7.2**	4.15	2.79	-1.99	3.14
	(0.025)	(0.148)	(0.250)	(0.371)	(0.314)

Notes: The dependent variable in each column is an individual component of institutional quality. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of different types of aid for subgroups of countries based on ancestral characteristics.

Table 4a. Interpreting Interactions Between Aid, Plow, and Brideprice				
Marginal Effects of Aid on Institutions Conditional On:				
	MR OLS	MR FE	RE	LD
No Plow and No Brideprice ($\hat{\beta}_{aid}$)	-0.502	-2.20	-0.108	-1.40
	(0.620)	(0.205)	(0.938)	(0.762)
Plow and No Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid}$)	-2.43	7.05*	4.74**	14.74**
	(0.266)	(0.098)	(0.018)	(0.037)
No Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{brideprice*aid}$)	3.67***	2.18***	0.957***	0.607
	(0.000)	(0.003)	(0.004)	(0.507)
Plow and Brideprice ($\hat{\beta}_{aid} + \hat{\beta}_{plow*aid} + \hat{\beta}_{brideprice*aid}$)	1.74	11.43**	5.80**	16.75**
	(0.485)	(0.019)	(0.046)	(0.030)

Notes: The dependent variable is our synthetic institutional quality measure. Each column represents a different type of specification to give an indication of the robustness of our results. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of aid for subgroups of countries based on ancestral characteristics.

Table 4b. Interpreting Interactions Between Aid, Plow, and Brideprice
Marginal Effects of Aid on Institutions Conditional On

	MR OLS	MR FE	RE	LD
No Plow and No Brideprice				
Government Aid	1.27	-15.17	-4.71	-106.8*
	(0.924)	(0.147)	(0.142)	(0.090)
Economic Aid	7.41	-21.62	-0.782	-34.92
	(0.615)	(0.135)	(0.872)	(0.207)
Other Aid	-1.73	0.521	2.26**	24.88*
	(0.313)	(0.618)	(0.037)	(0.068)
Plow and No Brideprice				
Government Aid	-7.09	20.47	6.16	14.11
	(0.709)	(0.352)	(0.575)	(0.779)
Economic Aid	1.63	3.43	4.70	22.21
	(0.860)	(0.762)	(0.272)	(0.429)
Other Aid	-2.67	4.53	4.33**	12.49
	(0.273)	(0.425)	(0.032)	(0.208)
No Plow and Brideprice				
Government Aid	4.20	4.01	6.02**	1.68
	(0.378)	(0.357)	(0.011)	(0.475)
Economic Aid	3.34	-1.08	-1.23	-14.84**
	(0.209)	(0.689)	(0.466)	(0.045)
Other Aid	3.37**	3.30***	0.919**	3.48*
	(0.014)	(0.002)	(0.041)	(0.061)
Plow and Brideprice				
Government Aid	-4.16	39.65	23.89*	122.57**
	(0.842)	(0.133)	(0.052)	(0.033)
Economic Aid	-2.44	23.97**	4.25	42.29**
	(0.825)	(0.048)	(0.374)	(0.025)
Other Aid	2.43	7.30	2.99	-8.91
	(0.344)	(0.202)	(0.233)	(0.456)

Notes: The dependent variable is our synthetic institutional quality measure. Each column represents a different type of specification to give an indication of the robustness of our results. P-values from an F-Test are in parentheses (*p<.1), (**p<.05), (***p<.01). Each respective row represents the joint effects of different types of aid for subgroups of countries based on ancestral characteristics.

Table 5
Colonialism and Aggregate Aid

	1	2	3	4	5
Aid/GDP	0.88**	1.60**	1.60**	1.61**	1.60**
	(0.37)	(0.72)	(0.71)	(0.72)	(0.71)
(Aid/GDP)*Colony		-1.04	-1.28*	0.59	-0.64
		(0.76)	(0.76)	(1.00)	(1.01)
(Aid/GDP)*Colony*Plow			3.36**		3.22**
			(1.32)		(1.45)
(Aid/GDP)*Colony*Brideprice				-1.98**	-0.74
				(0.88)	(0.84)
(Aid/GDP)*Colony*Plow*Brideprice					-0.92
					(3.75)
Observations	1445	1445	1445	1445	1445
Number of Countries	104	104	104	104	104
Estimation Type	FE	FE	FE	FE	FE
R^2	0.09	0.09	0.10	0.09	0.10
RMSE	51.99	51.95	51.84	51.90	51.87

Notes: The dependent variable is our synthetic institutional quality measure. A dummy variable for whether or not a country was a colony is included and interacted with aid, ancestral plow, and ancestral brideprice. Clustered standard errors are in parentheses (*p<.1), (**p<.05), (***p<.01).