

Violence Against Women: A Cross-cultural Analysis for Africa*

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Abstract

Using a new dataset, we investigate what explains violence against women in Africa. We focus on cultural factors arising from pre-colonial customs and show that these factors determined social norms about gender roles, family structures and intra-family violence, which persisted even when the initial conditions change. A first set of ancestral characteristics relates to women's economic role: ethnic groups where women participated less in production (e.g., due to plough agriculture, husbandry or fishing) have higher levels of violence against women today, and more acceptance of it. A second set of ancestral characteristics pertains to marriage patterns and living arrangements. Endogamy and virilocality are strongly positively associated with both the level and the acceptance of domestic violence. Our analysis sheds light on the origin, and long term persistence, of gender norms conducive to gender based violence.

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1 Introduction

Violence perpetrated by men against their female partners is widespread: the World Health Organization (2013) estimates that more than one third of women in the world have been victims of either physical or sexual violence, with low income countries disproportionately affected. In addition to being a violation of women’s human rights, intimate partner violence (IPV) is a public health problem with economic and social costs. Victims of violence suffer physical and psychological distress and experience a decline in labor productivity and loss of wages, which has negative consequences on the health and education of their children.¹ While IPV is widespread in many parts of the world, Sub-Saharan Africa exhibits especially high levels of it and IPV is widely considered acceptable in the continent (Devries et al., 2013). In this paper we assess how cultural factors influence current spousal violence in Africa using data on domestic violence from the Demographic and Health Surveys (DHS).² We merge these data with information on ancestral anthropological and cultural practices of ethnic groups. We then study both the actual occurrence of violence and its degree of acceptability in the eyes of men and women.

We find robust evidence of long lasting cultural effects, in particular persistence of social norms about gender roles. In ethnic groups where women traditionally had limited or no economic role in the market, men acquired a predominant role in the family. In these groups violence is more common today. For instance domestic violence is higher in societies traditionally based upon plough agriculture, where women participated less in agricultural production (Alesina, Giuliano and Nunn, 2013), and in societies based upon fishing and husbandry, which were male activities. On the contrary in societies where women were actively involved in subsistence activities, like non-plough based agriculture, violence against women is lower today.

We also find a positive correlation between domestic violence and women’s

¹See World Health Organization (2004). Carbone-López, Kruttschnitt and Macmillan (2006) estimate the contributions of different types of intimate partner violence exposure to physical health, mental health and substance abuse. Duvvury, Callan, Carney and Raghavendra (2013) provide a review of different costing *methodologies*. Women’s Advocates Inc. (2002) calculates that intimate partner violence costs the US economy \$12.6 billion on an annual basis, that is 0.12 percent of GDP. This estimate includes legal and medical services, judicial system costs and lost productivity. Unfortunately, we did not find comparable cost estimates for the Sub-Saharan African context we study.

²We decided to consider only African countries because the number of non-African ones for which the DHS reports both data on domestic violence and the ethnicity of the respondent is negligible.

current participation in the labor market. Although this result cannot be interpreted in a causal way, it is consistent with the male backlash theory, according to which women who are economically independent may constitute a threat for their partner, who may exert violence as a way to reestablish his predominance in the household. We then consider the interaction between working today and the traditional economic role of the women. One hypothesis is that violence may be especially prevalent against women who work in societies today where their traditional role was that of a ‘stay home’ wife. In these societies, women who work today may be perceived as going against the prevalent cultural norm of their ethnicity, and be more subject to violence. The qualitative pattern of the results is by and large consistent with this hypothesis, but the evidence is not very robust.

We then explore traditional marriage norms and living arrangements. Women belonging to an ethnicity that was traditionally endogamous, i.e. where marriage occurs within the same ethnic group, are more subject to violence today. Among these groups, violence is also considered more acceptable by both men and women. This may reflect the fact that ethnicities that practiced endogamy were generally less open to interaction with outsiders and to new ideas on the role of women in society. We also find that among ethnicities where traditional norms prescribed that upon marriage the couple should reside in the same village or clan territory of the husband (patrilocal or virilocal residence) domestic violence today is more common and more acceptable. These social norms not only implied a larger power within the family to the husband, relative to the wife, but in addition women living in the same village or clan of the husband were less protected by their own family.

Our paper makes two contributions to the existing literature. First, to the best of our knowledge, our work is the first one to combine data for all DHS surveys available for Africa in order to investigate contemporaneous as well as ancestral correlates of spousal violence and attitudes towards it.³ Second, by assembling an original dataset that matches ethnic groups in the DHS with information on ancestral characteristics from Murdock’s Ethnographic Atlas, we are able to shed light on the origin and the long term persistence of gender norms conducive to gender based violence.

The remainder of our paper is organized as follows. Section 2 reviews the literature and describes our hypotheses more precisely. Section 3 describes

³Heise and Kotsadam (2015) and Cools and Kotsadam (2015) evaluate different correlates of domestic violence and attitudes towards this phenomenon, but they focus on contemporaneous correlates.

the data and our matching procedures. Section 4 presents the empirical strategy and the results. Section 5 describes some robustness checks. The last section concludes.

2 Related literature and hypotheses

2.1 The literature

The present paper is related to two main strands of literature: the literature on the determinants of domestic violence and that on the persistence of cultural values.

The former cuts across disciplinary boundaries (see Lawson (2012) for a survey). One branch of sociological studies embraces a “feminist perspective”, which analyzes violence against women as an expression of male dominance (e.g., Dobash and Dobash (1979) and Johnson (1995)). Instead the ‘ecological theory’ underlines the importance of environmental factors and social relations and relates violence against women to various micro and macro variables inside and outside the family. The exchange and social control theory calls attention to the relative benefits and costs of domestic violence for the individual and emphasizes the role of social control against family violence, which may increase the cost of violence for men (e.g., Gelles (1983)). In recent years, a large literature has investigated the link between the income gap and spousal violence. The pioneering study is Gelles (1976), who observes that the fewer resources a woman has, the more likely she is to be abused. Farmer and Tiefenthaler (1997) conclude that in the United States an improvement in women’s economic opportunities leads to a decline in spousal violence. Bowlus and Seitz (2006) use structural methods to estimate a negative effect of female employment on abuse. Aizer (2010) exploits administrative data to build a new measure of violence, which is based on female hospitalizations for assault, and she concludes that the decline in wage gap corresponded with reduced violence against women. Heise and Kotsadam (2015) use data from the DHS and the WHO and observe that violence against partners is less prevalent in countries with a high proportion of women in the work force, but working for cash increases a woman’s risk in countries where women employment is lower. Cools and Kotsadam (2017) conclude that resource inequality, both within the household and at the aggregate level, is associated with more spousal abuse in Africa. Guarneri and Rainer (2018) use the experience of colonial Cameroon to show that women in former British territories are more likely to be in paid employment today and to be victims of intimate partner violence, compared to women in for-

mer French territories. They interpret this as evidence in favor of the male backlash hypothesis.

Spousal violence may be a bargaining instrument, adopted by the husband to impose his control (Anderson, (1997); Macmillan and Gartner (1999); Johnson and Ferraro (2000)). This is the so-called male backlash theory, according to which husbands feel their authority threatened if their wives work, so they use violence as a way to reinstate their power.⁴ Bertrand, Kamenica and Pan (2015) find that in the United States couples where the wife earns more than the husband are less happy, are more likely to divorce and the wife spends more time on household chores. In societies that are more patriarchal and conservative and where divorce is not socially accepted, growing tensions within the couple generated by increasing economic opportunities for women may result in higher levels of intimate partner violence. Bloch and Rao (2002) find that, in India, women whose family of origin is richer are more likely to be victims of domestic violence. Given that divorce is stigmatized, a woman can hardly escape from an abusive husband. Since violence is interpreted as a signal of a husband's dissatisfaction, the only way for a woman's parents to stop the husband's abuses is to pay him. Economists and psychologists have recently investigated how violent behavior can be a reaction to frustration. Card and Dahl (2011) show that an unexpected loss when the home football team is the favorite is associated with an increase in the rate of intimate partner violence.

Secondly, our work relates to the literature on the impact of historical legacies on current outcomes of violence. Pollak (2004) shows a high degree of intergenerational correlation of spousal violence. The importance of intergenerational transmission on shaping gender roles is also stressed by Thornton, Alwin and Camburn (1983) and Fernández, Fogli and Olivetti (2004). Tur-Prats (2015) focuses on Spain and shows that territories where stem family was socially predominant in the past are characterized by a lower prevalence of domestic violence today.⁵ She explains this finding with a model in which co-residence with the mother-in-law increases the productive role of the wife, improving her participation in agricultural activities. The presence of an older woman in the household decreases the burden of domestic work for the wife, freeing up time for farming.

⁴A connected, albeit distinct, hypothesis advanced by evolutionary biologists is that of sexual control (e.g., Muller and Wrangham, 2009).

⁵A stem family is a family arrangement in which two generations cohabit, since one son stays at the parental homestead with his wife and kids. It is the opposite of nuclear family, where all children leave the parents' household to start their independent household.

Probably a paper more directly related to ours, at least methodologically, is by Michalopoulos, Putterman and Weil (forthcoming). They estimate the effect of ancestral ways of life on current economic outcomes, focusing on Sub-Saharan Africa and matching individual data from the Demographic and Health Surveys with ethnographic characteristics of distinct ethnic groups from the Ethnographic Atlas. They show that descendants of societies that were traditionally dependent on agriculture are wealthier and better educated. While they investigate the impact of descending from ethnicities that traditionally practiced agriculture on distinct current outcomes (men’s education, wealth, etc.), we focus specifically on domestic violence and try to uncover the role played by a broader set of cultural and societal factors.

Our work also relates to the economic literature that has tried to provide an explanation on the distant origins of gender roles. Alesina, Giuliano and Nunn (2013) empirically test Ester Boserup’s hypothesis that differences in gender roles are determined by historical agricultural practices. In particular, descendants of societies that practiced plough agriculture prior to industrialization are characterized by more unequal gender norms today. This is due to the fact that the use of plough required more physical strength, so in societies based on plough agriculture, women started to be relegated into the domestic sphere. They conclude that descendants of societies that practiced plough agriculture are characterized by a higher degree of gender inequality today. Studying the variation in polygamy across African societies, Fenske (2015) shows that districts that received more colonial teachers in French West Africa and areas that received more Christian missions have lower polygamy rates today.⁶

2.2 Hypotheses

We plan on testing three broad hypotheses. The first concerns the relationship between domestic violence and the current productive role of women. We ask whether violence, and the acceptability of it, is higher or lower in households where the woman works. The theoretical predictions on this point are ambiguous, depending on which of several mechanisms dominates. One mechanism emerges from bargaining models of the household (e.g., Manser and Brown, 1980; McElroy and Horney, 1981; Lundberg and Pollak, 1996). In these models, the equilibrium allocation of resources depends on the outside options of the spouses, and higher economic independence of

⁶Huillery (2009) shows that colonial history shapes current outcomes, in particular education.

the woman is predicted to improve her bargaining power and lead to outcomes more closely aligned with her preferences. The bargaining framework has been adapted to explicitly incorporate domestic violence (e.g., Tauchen, Witte and Long, 1991; Farmer and Tiefenthaler, 1997; Aizer, 2010) by postulating that women's and men's utility depend positively on consumption and, respectively, negatively and positively on domestic violence. Also in these models, violence is predicted to fall as women's reservation utility increases through employment and financial independence in case of marital dissolution. In contrast to the empowering role of female employment outlined above, proponents of the 'male backlash' theory argue that an increase in women's economic independence may actually trigger more violence if the man sees his dominant role within the household threatened, and uses violence to reinstate his power (e.g., Eswaran and Malhotra, 2011). Finally, another channel through which a woman's working status may affect IPV is by affecting the resources available to the household. The psychological literature has established that poverty is associated with stress – the so called 'frustration-aggression' hypothesis (Barlett and Anderson, 2013). In this sense, if women's work leads to an increase in household income this could lower the levels of stress in the family and reduce the likelihood of domestic violence (Jewkes, 2002).

The second hypothesis we test relates to the effects of ancient socioeconomic conditions on current levels of violence and attitudes towards IPV. Our idea is that the features of economic production and living arrangements in ancient societies may have contributed to the formation of cultural norms related to the role and dignity of women which persist to this day, and can contribute to explaining variation in domestic violence across societies. We focus on two sets of characteristics pertaining to ancient societies. The first includes variables that proxy for the economic value of women, and their contribution to production. Our prior is that in societies where women were more actively engaged in production and contributed economic resources to the household, norms less accepting of domestic violence may have emerged. There are at least two reasons for this. The first would be a need to preserve women's health and productivity; the second is working women possess a higher status within the family and within society. If this hypothesis is correct, we should expect that societies whose economy was more dependent on predominantly male activities (e.g., plough agriculture, hunting, fishing, husbandry) should exhibit more tolerance of violence, compared to societies where women were contributing more to production (e.g., non-plough agriculture). In addition they may have contributed to the for-

mation of a culture of respect (or lack thereof) for women that pertains to the marriage market and associated living arrangements.

Social scientists have advanced various theories to explain under which conditions bride price, instead of dowries, is more likely to prevail (e.g., Botticini, 2003). Prominent explanations revolve around the relative scarcity of women (Becker, 1981), the extent of stratification and inequality in society (Goody, 1973), and the contribution of women to agriculture (Boserup, 1970). The latter argument posits that bride price is more likely to emerge in economies in which agriculture is based on shifting hoe cultivation. In most African societies, the groom acquires the right to the bride's labor force by paying a bride price to the bride's family. Based on this interpretation, the effect of bride price on IPV would be ambiguous. On the one hand, bride price could be interpreted as an explicit recognition of women's value, hence reduce the incidence of domestic violence. On the other hand, bride price may make it more difficult for women to break away from an abusive marital relationship because they would need to repay the bride price (Ansell, 2001).⁷

The location of married couples in proximity to the man's or the woman's family could also affect the formation of norms around IPV, by affecting the monitoring technology of the family as well as the outside options of each spouse in case of marital dissolution. In matrilineal societies, where women reside in the same location as their family of origin, they should be more protected because their relatives have easier access to information, and it is also less costly for the woman to return to her parents in case of abuse. In patrilineal (or virilineal) societies, the opposite would occur.

Finally, one could foresee an interplay between current employment status of a woman and the ancestral characteristics that contributed to the formation of social norms. In particular, we test whether the association between the fact that a woman works and her exposure to IPV is systematically different across societies depending on how economically active women were in the past. One conjecture is that in societies that developed a more gender-equal division of labor because women were historically involved in the production process, a woman working currently may not constitute such a deviation from the norm, hence the male backlash effect would be smaller. This hypothesis can be seen as a variant of the 'contextual acceptance employment hypothesis' proposed by Cools and Kotsadam (2017), with one

⁷In line with this argument, Horne, Nii-Amoo Dodoo and Dodua Dodoo (2013) conduct a vignette experiment in Ghana's Volta region and observe that when a man has paid a brideprice, he gains the right to the woman's reproductive services. In other words, after brideprice payment, wives defer to their husbands for reproductive choices.

important difference. Cools and Kotsadam regress IPV on the interaction between a woman’s employment and current aggregate characteristics of the location where she lives (e.g., female employment rate, average female education, propensity to condone wife beating). We instead focus on predetermined variables that measure ancestral modes of production and living arrangement, which indirectly contribute to present day norms. Our approach has the advantage of relying on a more exogenous source of variation, but possibly at the cost of noisier estimates.

3 Data

3.1 Demographic and Health Surveys

We combine several data sources. The main one is the Demographic and Health Surveys (DHS), a series of representative cross-sectional surveys of women and men aged 15-49 in randomly selected households. In order to match the DHS individual level data with Murdock’s Ethnographic Atlas (see below) we need information on respondents’ ethnicity. We use language spoken at home or native language as a proxy for ethnicity when information on respondent’s ethnic group is not available. For this reason, we restrict the analysis to the DHS waves conducted in African countries which include the domestic violence module and data on the ethnicity (or language) of the respondent. We consider only African countries because the number of non-African countries for which both the violence module and data on the ethnicity (or language) of the respondent are available is negligible.

We have 33 DHS surveys conducted in 21 sub-Saharan countries between 2004 and 2016⁸. Amongst these, 5 survey rounds do not contain data on attitudes towards violence or on respondents’ ethnicity in the male recode⁹.

⁸The survey rounds considered in the analysis are: AO7 (Angola, 2015-2016), BF6 (Burkina Faso, 2010), CD5 (Congo Democratic Republic, 2007) CD6 (Congo Democratic Republic, 2013-2014), CI6 (Cote d’Ivoire, 2011-2012), CM4 (Cameroon, 2004), CM6 (Cameroon, 2011), ET7 (Ethiopia, 2016), GA6 (Gabon, 2012), GH5 (Ghana, 2008), KE5 (Kenya, 2008-2009), KE6 (Kenya, 2014), ML5 (Mali, 2006), ML6 (Mali, 2012-2013), MW4 (Malawi, 2004), MW5 (Malawi, 2010), MW7 (Malawi, 2015-2016), MZ6 (Mozambique, 2011), NG5 (Nigeria, 2008), NG6 (Nigeria, 2013), NM6 (Namibia, 2013), RW4 (Rwanda, 2005), RW6 (Rwanda, 2010), RW6 (Rwanda 2014-2015), SL6 (Sierra Leone, 2013), TD6 (Chad, 2014-2015), TG6 (Togo, 2013-2014), UG5 (Uganda, 2006), UG6 (Uganda, 2011), ZM5 (Zambia, 2007), ZM6 (Zambia, 2013-2014), ZW5 (Zimbabwe, 2005-2006), ZW6 (Zimbabwe, 2010-2011).

⁹The survey rounds CM4 (Cameroon, 2004), CD5 (Congo Democratic Republic, 2007) and ML5 (Mali, 2006) do not ask questions related to attitudes towards violence in the male recode, while the survey rounds RW4 (Rwanda, 2005) and RW6 (Rwanda 2014-2015)

We analyze both (i) actual episodes of violence experienced by women, and (ii) attitudes of men and women towards violence against women. We include only men and women in our sample in a relationship, that is, all respondents that were married or cohabiting with their partner at the time of the interview.

Actual violence experienced. We use questions asking women whether they have ever experienced various forms of spousal abuse since they were 15, namely whether their husbands ever: pushed, shook or threw something at them; slapped them; punched them or hit them with something harmful; kicked or dragged them; strangled or burnt them; physically forced them into unwanted sex. Eliciting information on domestic violence is difficult for obvious reasons, but the DHS protocol has high standards of data quality. The domestic violence module is administered to only one randomly selected woman per household. This ensures that other respondents in the household will not know about the questions she was asked. At the beginning of the domestic violence section, respondents are read a statement informing them that the subsequent questions could be sensitive and reassuring them of the confidentiality of their responses.

Attitudes towards violence. To measure attitudes, we use a set of questions asking whether a husband is justified in hitting or beating his wife under different circumstances, namely if: the wife goes out without telling him; the wife neglects their children; the wife argues with him; the wife refuses to have sex with him; the wife burns the food. The survey module containing questions on attitudes towards violence, contrary to the domestic violence module, is administered to all women aged 15-49 in the selected households, as well as to a sample of men.

Section A2 of the Appendix contains further details on the construction of our dependent variables.

3.2 Murdock’s Ethnographic Atlas and matching with DHS

Our second data source is the Ethnographic Atlas, a worldwide ethnicity-level database constructed by George Peter Murdock, which collects ethnographic information for 1,267 ethnic groups and contains over one hundred ethnographic variables taken from societies at the time of first contact with Europeans. We use the Atlas to combine individual level data from contemporary Africa with information on the ancestral ethnicities of respondents. The ancestral characteristics reported in the Atlas include information on

are missing ethnicity or language information for males.

the mode of production (e.g., reliance on agriculture, hunting, fishing, etc.), as well as on marriage and residential patterns.

Matching the DHS with the Ethnographic Atlas is not a trivial exercise, since names of ethnic groups in the DHS do not always coincide with the ones in the Atlas. Overall, we have 654 different ethnicities in our DHS sample and we are able to match 410 of them¹⁰. Our matching procedure follows Michalopoulos et al. (forthcoming) but with several differences.¹¹ In order to reconcile the ethnic affiliation in the DHS with the one in Murdock’s Atlas, we consider seven possible methods and we order them on the basis of their accuracy. Then, following this ordered list, we adopt the first method that allows us to achieve a match between the two datasets. Table 1 presents the number, and the share, of observations and ethnicities that are matched using each strategy.

[Insert Table 1]

The easiest case is the one in which the name of the ethnicity in the DHS is exactly the same as the one used by Murdock. We are able to directly match about 20 percent of the DHS ethnic groups, corresponding to 45 percent of the observations. When direct matching is impossible, we use the dataset constructed by Nunn and Wantchekon (2011), which provides a concordance between the ethnicities in the Afrobarometer Round 3 and those in the Ethnographic Atlas. For example, the DHS ethnicity

¹⁰This number excludes all the values in the DHS ethnicity variable that are not actual ethnic groups, such as "African", "Foreign country", "Cedeao country", "Sierra Leone" etc. These observations are considered as missing ethnic information. Respondents for whom ethnic information was not collected and whose primary language is not informative of their ethnic group (such as respondents whose language spoken at home or native language is English or French) are also considered as missing ethnic information. Overall the number of observations in our DHS sample that are missing ethnic affiliation is 48401.

¹¹They do not distinguish between Ethnologue and the Joshua Project, but they devise three different matching techniques which use data on ethnicities’ names from either Ethnologue or the Joshua Project: (i) DHS and Murdock names are alternative names according to Ethnologue or the Joshua Project; (ii) a name in Murdock’s Atlas is listed as a macro ethnicity that includes the ethnicity in the DHS, according to Ethnologue or the Joshua Project; and (iii) an ethnicity in Murdock’s Atlas is part of a larger ethnicity in the DHS, according to either Ethnologue or the Joshua Project. Since this distinction is not relevant for our purposes, we do not separate these three cases, while we consider Ethnologue and the Joshua Project as separate sources. Finally, we introduce two new types of sources, referred to as "Murdock’s book" and "Multiple sources" in Table 1. The first of these two sources refers to the book "Africa: its peoples and their cultures" by Murdock. The second source type refers to situations in which we used more than one source to match the DHS ethnicities to the Murdock names.

“Urhobo” is included amongst the Afrobarometer ethnic groups in Nunn and Wantchekon’s (2011) dataset, where it is associated with the ethnic group that appears as “Isoko” in the Atlas. Using this approach, we match close to 5 percent of the DHS ethnicities, corresponding to 13 percent of the observations in our sample.

The third method relies on Ethnologue, a catalogue of more than 6,700 languages spoken in 228 countries. Three types of matching relations are possible between a DHS name and a name in Murdock’s Atlas: (i) DHS and Murdock names are listed as alternative names by Ethnologue; (ii) a name in Murdock’s Atlas is listed as a supergroup of the ethnicity in the DHS, i.e. it is a macro category that includes also the ethnicity in the DHS; and (iii) a name in Murdock’s Atlas is a subgroup of a DHS ethnic group, i.e., it is a smaller ethnic group which is included in a larger ethnicity. Michalopoulos et al. (forthcoming) keep these three approaches separate. However, since this distinction is not relevant for our purposes, we combine these three categories into a single category, referred to as Ethnologue. For instance, the DHS ethnic group “Ndola” can be called also “Ndoola”, “Njoyane”, “Nundoro” or “Ndoro”. Since the last one appears in the Ethnographic Atlas, we are able to match it with the DHS ethnicity of interest. Overall, close to 8 percent of the ethnicities are matched using Ethnologue, which accounts for 11 percent of the observations.

Fourth, we make use of Murdock (1959). As for Ethnologue, the information in Murdock (1959) allows us to perform the matching between ethnic names linked by different types of relations. In addition to the three relation types described for Ethnologue, we have a fourth case: the DHS name is matched to an ethnic group that is described in Murdock (1959) to be part of the same supergroup. Again, we combine the four types of matching realized thanks to this fourth source into a single category, referred to as Murdock’s book. For instance, according to Murdock(1959), the ethnic name “Ngamo” found in the Nigerian DHS surveys is said to be kindred to the “Karekare” people.

The fifth method uses data from the Joshua Project, and considers once again the same three relations between DHS names and Murdock’s Atlas names described for Ethnologue. For example, according to the Joshua Project, the name “Marwa” found in the Nigerian DHS surveys is a dialect spoken by a subgroup of the ethnic group “Katab”, an ethnicity that is present in Murdock’s Atlas. The Joshua Project allows us to match about 4 percent of the ethnicities and 3 percent of the observations in the sample.

When the ethnicity name reported in the DHS does not appear neither in Ethnologue nor in the Joshua Project, we check whether other sources, such

as those cited in Wikipedia or peoplegroups.org, mention alternative names for that ethnic group. For instance, the group “Oron” found in the Nigerian DHS surveys shares a close ancestral lineage to the “Efik” people, present in the Ethnographic Atlas, according to the sources cited in Wikipedia. Overall, 0.3 percent of the DHS ethnic groups are matched with the Atlas using other sources, for a total of 0.1 percent of the observations.

In some cases, multiple sources are needed in order to achieve a concordance between the DHS and Murdock names. For example, “Bajju” is a Nigerian ethnicity with some alternate names according to the Joshua Project (“Kaje”, “Jju”, “Kache”). However, none of them appears in Murdock’s Atlas, while “Kaje” is associated to the group “Katab” by Murdock (1959), which is part of the same supergroup and is found in the Atlas. About 9 percent of the DHS ethnicities are matched with the Ethnographic Atlas using two sources, for a total of about 3 percent of the observations. When the available information is ambiguous and leaves some doubts on the reliability of the matching we also employ multiple sources to check for consistency across sources.

Moreover, some of the sources we use might suggest that one of the ethnic names in the DHS data is actually associated to more than one name of the Ethnographic Atlas. This usually happens when the DHS data groups more ethnicities into a single ethnic name, while the Atlas has ethnographic information at a greater level of detail. For instance, Ethnologue suggests that the DHS name “ateso-karamojong” corresponds to two distinct ethnic groups in the Atlas, namely the “Teso” and the “Karamojon”. In this situation, we assign DHS observations to the mean value of the Ethnographic Atlas variables over the “Teso” and the “Karamojon”.

In total we have 373,220 observations in our selected sample for which respondents’ ethnicity is available. We are able to match 88.4 percent of them: a total of 329,818 individuals are matched to a group in Murdock’s Atlas and assigned ancestral characteristics of the corresponding ethnicity in the Ethnographic Atlas. Appendix table A.1 shows how many observations were matched to the Ethnographic atlas, how many were not matched despite having information on ethnic affiliation and how many were missing data on own ethnicity by country and by gender of the respondent. We were able to match more than 88 percent of both men and women whose ethnic affiliation is known. The countries with the highest percentage of observations missing information on ethnic affiliation are Angola and Congo, while the percentage of observations whose ethnicity we were not able to match is above 30 percent in Congo, Gabon and Chad.

To understand whether the observations that we are able to match to

the Ethnographic Atlas are systematically different –which would affect the representativeness of our findings– in Appendix Table A.2, we compare the means of socioeconomic controls and violence outcomes observed in the DHS for individuals who have been matched (column 1) and not matched (column 2), and we report the p-value for the null that the difference between these two is zero. Column 4 shows the normalized difference proposed by Imbens and Wooldridge (2009):

$$\Delta = \frac{\bar{X}_M - \bar{X}_U}{\sqrt{S_M^2 + S_U^2}}$$

where \bar{X}_M and \bar{X}_U are the means of covariate X in the matched and unmatched group, respectively, and S_M^2 and S_U^2 are the corresponding sample variances of X . Imbens and Rubin (2015) suggest as a rule of thumb that Δ should not exceed 0.25. The two groups are well balanced in terms of age, education, wealth, working status, partner characteristics and urban residence. Household size and fertility are slightly higher in the unmatched sample, but the magnitude of the difference is small. Regarding violence outcomes, actual violence seems to be balanced, while men’s attitudes in the unmatched sample seem to be somewhat more favorable to violence, although the difference is relatively small (the standardized difference is always below 0.25).

Appendix Table A.3 lists the variables we use in our empirical analysis and their sources. Section A3 of the Appendix provides a detailed description of the independent variables constructed from the Ethnographic Atlas.

3.3 Descriptive statistics

Domestic violence

[Insert Table 2]

Table 2 reports summary statistics on the dependent variables used in the analysis. The indicator variable ‘*Attitude dummy*’ takes value 1 if the respondent believes that violence is acceptable in at least one out of five circumstances included in the survey: going out without telling the husband; neglecting the children; arguing with the husband; refusing to have sex with the husband; and burning the food. The first row of Table 2 shows that 47 percent of women justify wife beating in at least one circumstance, while the corresponding figure for men is 29 percent.

The ‘*Attitude index*’ is the total number of circumstances in which the respondent thinks it would be acceptable for a man to beat his wife. The average number of episodes in which spousal violence is justified is about 1.3 (out of 5) for female respondents and 0.7 for male respondents.¹² We also report the fraction of women and men justifying wife beating in each of the five circumstances included in the ‘*Attitude index*’. The circumstance under which both female and male respondents justify more husband’s abuses is when the wife neglects the children: 33 percent of women believe that violence is acceptable in this case, while this share is 18 percent for men. More than one out of four women justifies spousal violence if the wife argues with the husband and even a higher share of female respondents believes that wife beating is acceptable when the wife goes out without telling the husband. Domestic violence seems to be less accepted by both women and men when the wife refuses to have sex with the husband and when she burns the food.

In the bottom part of Table 2 we examine variables that capture the actual violence experienced by female respondents. Note that the sample size is smaller because not all women are selected to be administered the domestic violence module. According to our first indicator, ‘*Violence dummy*’, 28 percent of women have experienced either sexual or physical violence perpetuated by their husbands since the age of 15. The DHS contains information on the occurrence of six different types of spousal violence, namely whether respondents have ever been pushed, shaken or thrown something at; slapped; punched or hit with something harmful; kicked or dragged; strangled or burnt; physically forced into unwanted sex.

In the last rows Table 2 we report the share of women who have experienced each given type of domestic abuse. This information allows us to also construct an indicator for the intensity of violence. This variable is computed as the sum of different types of physical and/or sexual aggression to which the woman has been exposed ever since age 15 (‘*Violence index*’). This index ranges from 0 to 6 and it has a mean of 0.57.

Ancestral characteristics

[Insert Table 3]

Table 3 reports summary statistics on the ancestral characteristics of each respondent’s ethnic group based on Murdock’s data. In our sample,

¹²The lower propensity to justify violence expressed by men may be due to under-reporting. While both men and women may, in principle, feel uncomfortable expressing support for violence in front of an enumerator, the problem is likely to be more severe for men, as they would be seen as the perpetrators.

agriculture was the main source of subsistence: 94 percent of respondents' ancestors mainly relied on agriculture, while the average share of subsistence provided by agricultural activities was 60 percent (variable '*Dependence on agriculture*').

In Murdock's data, ethnicities are classified into one of the following mutual exclusive categories: the plough was absent; the plough existed but it was not aboriginal; the plough was aboriginal and found in the society prior to contact. Using this categorization, we construct an indicator variable equal to 1 if the society used the plough (whether aboriginal or not) and zero otherwise. Only 3.5 percent of women's ancestors in our sample traditionally used the plough.

Aside from agriculture, the Ethnographic Atlas lists four other production activities: gathering, hunting, fishing and animal husbandry, and the share of subsistence they provided is, respectively, .06, .10, .09 and .21. In addition, the Atlas reports, for each production activity, the following gender participation categories: males only; males appreciably more; equal participation; females appreciably more; and females only. Using this information, for each production activity we construct an indicator variable equal to one if there was equal gender participation, if women contributed more than men or if women were the only participants to the production activity, and zero otherwise.¹³ Descriptive statistics reported in Table 3 suggest that gathering and, to a lesser extent, agriculture were characterized by at least as high participation by women as by men. Animal husbandry and fishing were predominantly male activities while hunting is an exclusively male activity.

We next consider a set of variables describing ancestral marriage and living arrangements. 95 percent of women have ancestors who practiced brideprice, that is a payment in monetary terms or in kind to the bride's family (variable '*Brideprice*'). More precisely, the dummy '*Brideprice*' is equal to 1 if the prevalent mode of marriage prior to industrialization was characterized by brideprice. In the definition of Murdock's Atlas this includes wealth transferred to the bride's family, bride service to the bride's family and token brideprice. In our sample 23 percent of women's ancestors practiced endogamy, the custom of marrying exclusively within a specific ethnic or social group. The prevalence of '*stem family*', i.e., an arrangement

¹³The original classification in Murdock's Atlas makes a distinction between "differentiated but equal participation" and "equal participation, no marked differentiation". Since this distinction is not relevant for our purposes, we combine these two categories. If the activity is present but participation by gender is not specified, or if the activity is absent, our variable takes a missing value.

where two generations cohabit, is 20 percent. ‘*Polygyny*’, a form of plural marriage in which a man is allowed to have more than one wife, is an ancestral characteristic of 98 percent of the respondents, and ‘*virilocality*’, a marriage arrangement according to which a married couple resides with or near the husband’s parents, was prevalent in 80 percent of the cases.

Appendix Table A.4 reports the correlations between different ancestral characteristics, while Appendix Table A.5 reports summary statistics for the socioeconomic controls that we use in our regressions.

4 Empirical strategy and results

4.1 Empirical model

We estimate the following regression:

$$Violence_{igc} = \alpha_c + \beta \cdot Ethno_g + \gamma X_{igc} + \epsilon_{igc} \quad (1)$$

where $Violence_{igc}$ is the outcome for individual i from ethnicity g in region c . This is the ‘actual’ violence dummy (or index) when we consider violence episodes experienced by the woman, and the violence ‘attitudes’ dummy or index when we focus on women’s and men’s attitudes. $Ethno_g$ indicates the ancestral characteristic of interest of ethnicity g , derived from Murdock’s Ethnographic Atlas. X_{igc} is a vector of individual controls including respondent’s and partner’s age and years of education, a dummy equal to one if the woman’s partner (when individual i is a woman) or the respondent (when individual i is a man) is currently working, the number of children ever born and the household size, a wealth index, a dummy for urban residence, a set of religion dummies and cohort fixed effects.¹⁴ In some specifications we also include a dummy for whether the respondent is working (in case the respondent is a woman), or the share of female partners working (if the respondent is a man), among the controls. We do not

¹⁴For male respondents with more than one wife or partner, the variables ‘partner’s age’ and ‘partner’s education’ measure the average age and education of the respondent’s partners. The DHS wealth index is an indicator of household’s economic status. It is a continuous variable and it is constructed using principal component analysis, starting from household’s assets.

Angelucci (2008), evaluating the impact of the program *Oportunidades* on domestic violence and alcohol abuse, observes that violence increases with woman’s age but with diminishing marginal returns. In order to check whether the relationship between age and violence is nonlinear, we included the woman’s and the partner’s age squared. Since the coefficients of woman’s and man’s age squared were typically insignificant, we decided to include only age, without its square, in our final specification.

consider these controls as part of our benchmark specification due to the potential endogeneity of women’s working status. Finally, the term α_c in (1) is a vector of fixed effects for the main regions of Africa according to the UN classification.¹⁵ Standard errors are clustered at the ethnicity level.

When the outcome is binary, we estimate (1) using a linear probability model and we conduct robustness analysis with a Probit model. When the dependent variable is a count variable (i.e., in the case of the violence index), we use ordinary least squares as a benchmark and test for robustness using a Poisson model.

4.2 Correlates of domestic violence

In Table 4 we regress our different violence outcomes on a number of individual level variables capturing the woman’s and the household’s current socioeconomic background. In the first six columns we do not control for women’s working status, which may be endogenous with respect to domestic violence measures, while in the last six columns we include also the variable ‘Woman working’. Interestingly, controlling for women’s working status does not seem to affect the remaining coefficients.

[Insert Table 4]

Violence (actual and tolerated) decreases with wealth. The propensity to justify husband’s abuses is negatively correlated with age and education for both women and men. This may reflect the fact that wealthier and more educated families are subject to less stressful conditions and this makes them less likely to resort to violence, or it may simply reflect preferences for exerting violence that negatively correlate with education and wealth.¹⁶ Household size and the number of births that the woman had are positively correlated with violence. The correlation with household size and fertility may have a number of interpretations, including the possibility that violence

¹⁵In our robustness analysis, we include country fixed effects. For the benchmark specification the regions considered are: Eastern Africa, which includes Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Uganda, Zambia and Zimbabwe; Western Africa, which includes Burkina Faso, Cote d’Ivoire, Ghana, Mali, Nigeria, Sierra Leone and Togo; Central Africa, which includes Angola, Cameroon, Chad, the Democratic Republic of the Congo and Gabon; Southern Africa, which includes Namibia.

¹⁶The negative relationship between education and acceptability of violence is consistent with evidence from Kenya, where a randomly allocated scholarsip program reduced the acceptability of domestic violence (Friedman et al., 2011).

increases under the stress of supporting large families, or reverse causality if the violence is a way for the man to induce higher fertility, or other unobserved factors.

In urban areas violence occurs more frequently but it is less justified by men and women. Urbanization is one of the few variables for which the results on actual violence reported and on attitudes do not go in the same direction. Reporting bias could be one interpretation of this discrepancy: urban women may be more open to revealing that they have been beaten, while at the same time being less accepting of it.

Columns 7 and 8 in Table 4 show that the occurrence of violence (but not acceptance) is increasing when women are currently working. Although one should be careful in interpreting this coefficient, given the potential endogeneity, this result is consistent with the ‘male backlash’ theory (whereby women who work may pose a potential threat to the dominating role of the husband), rather with an increase in women’s bargaining power which would lead to a negative effect on violence.

We now move to examine how past socioeconomic arrangements may affect current levels of violence due to the persistence of attitudes and cultural values. All the variables listed in Table 4 are included as controls in every regression we present in the next sections but their coefficients are not reported for brevity. The coefficients on the individual controls are very stable.

4.3 Cultural determinants of domestic violence

4.3.1 The role of women at home and in the market

Table 5 reports our results on how ancestral characteristics pertaining to the role of women in market activities affects contemporary violence. Each panel in the table focuses on a different explanatory variable and reports the coefficient on the variable of interest (the other individual controls are included but not reported), the number of observations, the R-squared and the mean of dependent variable in the subsample considered, to help assess the magnitude of the estimated effect in relation to the mean.

[Insert Table 5]

We focus on the traditional modes of production. The coefficients of the variable ‘*Plough*’ in columns 3 to 6 of panel A indicate that the descendants of societies that practiced plough agriculture are more likely to justify domestic abuse today. Although few ethnicities used the plough in our sample,

this result is consistent with evidence from Alesina et al. (2013) that plough based agriculture rendered women’s contribution to production less valuable than men’s, contributing to the creation of norms that undervalue women to this day.

In panel B we study how the current practice and attitudes about intimate partner violence differ across ethnicities whose main source of income was agriculture (opposing to pastoralism and other activities). In economies based on agriculture, which in most of our sample did not use the plough, women could participate more in the labor force and develop a more equal status in society and in the family. Indeed, the results in panel B of table 5 are consistent with this interpretation: the dummy ‘*Agriculture main source*’ significantly reduces both men’s and women’s propensity to justify domestic violence (columns 3 to 6).

In the next five panels of Table 5, instead of relying on dichotomous variables, we employ continuous indicators capturing the share of total production accounted for by various activities. For example, the variable ‘*Dependence on agriculture*’ in panel C indicates the share of total subsistence activities accounted for by agriculture in the respondent’s ethnic group. In line with the results of panel B, violence (both actual and tolerated) is decreasing in the share of total production accounted for by agricultural activities. Dependence on gathering is insignificant, while dependence on fishing –which is practiced almost exclusively by men in our sample– is associated with more violence experienced by women today. Similar results apply for dependence on husbandry, which is practiced predominantly by men. One counterintuitive result in panel E is that descendants of societies that depended more heavily on hunting seem less prone to justifying spousal violence.¹⁷

Overall, we find that ancestral characteristics of society which led to a different economic role of women seem to have generated cultural attitudes that persist even today even when socioeconomic conditions have evolved.

4.3.2 Male backlash and traditional norms

In Table 4 we found that the occurrence of violence is higher when women currently work outside the home. We next consider whether this effect is larger for ethnic groups whose women traditionally contributed less to the family income. The underlying idea is that in these societies women who

¹⁷A possible explanation could be that in societies that were strongly reliant on hunting, some productive role could remain for women who stayed behind when men left to go hunting (e.g., crops cultivation).

work outside the home exhibit a significant departure from their traditional role, and this may trigger a stronger (negative) response from men.

To test whether this conjecture is confirmed in the data, we estimate the following regression:

$$\begin{aligned}
 Violence_{igc} = & \alpha_c + \delta \cdot Woman_working_{igc} + \beta \cdot Ethno_g + \\
 & + \rho \cdot Woman_working_{igc} \cdot Ethno_g + \gamma X_{igc} + \epsilon_{igc} \quad (2)
 \end{aligned}$$

where all variables are defined as above and standard errors are clustered at the ethnicity level. Results are reported in Table 6.

[Insert Table 6]

Each panel in the table shows the coefficient of the variable ‘*Woman working*’, of the cultural characteristic of interest and of the interaction between these two variables. We include the individual controls, cohort fixed effects and fixed effects for the major regions of Africa. In panel A we examine the role of plough agriculture. While current working status of the woman predicts actual violence (columns 1-2) and traditional use of the plough predicts attitudes that justify wife beating, the interaction term is generally insignificant.

Next, we interact the variable ‘*Woman working*’ with the overall dependence on different production activities in ancestral societies. The fact that a woman works does not seem to trigger a differential response in societies where agriculture was the main source of income (the interaction term is insignificant in panel B), nor in societies that were more dependent in agriculture (panel C). On the contrary, when we consider society’s dependence on gathering, while female employment is associated with higher probability and intensity of violence in societies that did not rely on gathering, ancestral reliance on gathering reverses this effect. Recall that gathering is the activity with traditionally the highest share of female labor force participation (see Table 3). Column 1 of Panel F shows that women who are currently employed are more likely to be victims of domestic violence and that the effect is stronger the higher the ancestors’ economic dependence on fishing, which was a traditionally male activity (the coefficient of the interaction term ‘*Woman working*Dependence on fishing*’ is positive and significant). No significant interaction emerges for hunting and husbandry (panels E and G, respectively).

Overall the results of this section offer limited support for the hypothesis that when women deviate from long established cultural norms associated

with their role by working outside the home, there is a violent response from men. While current working status and ancestral characteristics per se predict the occurrence of attitudes towards intimate partner violence, the significance of their interaction is not very robust.

4.4 Marriage norms

We next consider another set of cultural determinants on the propensity to violence, arising from distinct marriage patterns amongst ethnic groups in pre-colonial times.

[Insert Table 7]

Panel A of Table 7 explores the role of endogamy, i.e., the practice of marrying within a specific social or ethnic group, on spousal violence. We find that being from an ethnicity that was traditionally endogamous is positively associated with violence experienced, increasing the likelihood of ever being a victim of violence by 9.3 percentage points, over a mean of 27.5 percent (column 1). This is accompanied by a positive and significant effect on the reported acceptability of violence towards women on the part of both men and women (columns 3 to 6). This may be due to the fact that ethnicities that practiced endogamy were generally less open to new ideas and to interacting with outsiders from the community and in some way more accepting of a culture where women are subject to violence from men.¹⁸

Second, we consider the role played by customary residence patterns upon marriage. For the majority of ethnic groups in our sample (80 percent of respondents), past traditional norms prescribed that upon marriage the couple should reside in the same village or clan territory of the husband and/or of his family (patrilocal or virilocal residence). In Panel B of Table 7 we find that virilocal residence is associated with higher domestic violence (both tolerated and actually experienced). This is consistent with virilocal societies promoting a culture relatively more centered around men, and also guaranteeing women less protection from their families and low outside options for women.

Another widespread social institution in Sub-Saharan Africa prior to industrialization was polygyny.¹⁹ Panel C shows that the prevalence of

¹⁸An additional factor may be that beating a wife of a different ethnic group may bring about retaliation across ethnicities. The possibility of retaliation and open conflict with other ethnic groups may have acted as a deterrent to domestic violence in societies practicing exogamy, in a similar way in which it may deter inter-ethnic conflict (Fearon and Laitin, 1996).

¹⁹For an empirical analysis of polygyny in Africa, see Fenske (2015).

polygynous unions in the past was positively associated to measures of actual violence but, somewhat surprisingly, negatively associated to measures of attitudes towards violence.

The fourth marriage arrangement we consider is the stem family, which is a small extended family where two generations cohabit in the same home-stead, as one son stays at the parental house with his wife and children. In our sample, the presence of stem family arrangements in the past is not significantly associated to domestic violence measures today. Qualitatively, the pattern of the coefficients in columns 5-6 of panel D suggests that where the stem family was socially predominant in the past, men tend to be less favorable to violence. This would be consistent with the evidence from Spain provided by Tur-Prats (2015), but our results are statistically insignificant.

Finally we consider the role of marriage payments. The dummy ‘*Bride-price*’ in Panel E takes value 1 if the prevalent mode of marriage of the respondent’s ethnic group prior to industrialization was characterized by brideprice. More than 90 percent of individuals in our sample have ancestors who practiced brideprice. As we see from the table, having brideprice in the past is not significantly associated with measures of violence today. This may stem from the contemporaneous operation of the two contrasting effects described in section 2.2. On the one hand, brideprice could be interpreted as an explicit recognition of women’s value and would be expected to decrease intimate partner violence. On the other hand, the obligation to repay the brideprice in case of break up of the marital relationship may reduce women’s bargaining power, thus leading to more violence.

5 Robustness checks

We test the robustness of our results along several dimensions. First, we experiment with different estimation methods for (1). In Appendix Tables A.6 and A.7 we use a Probit model when the outcome is a dummy variable (corresponding to columns 1, 3 and 5 of the tables) and a Poisson model when the dependent variable is a count variable (i.e., in the case of the violence indexes used in columns 2, 4 and 6).²⁰ The results are consistent with what we found using OLS.

Second, we modify specification (1) adding country-round fixed effects. These absorb country-specific characteristics that are allowed to vary be-

²⁰For Probit estimates we report marginal effects, while for Poisson models we report incidence-rate ratios, meaning that all coefficients presented in the tables are ‘exponentiated’ (for example, we report $\exp(\hat{\beta})$ rather than the estimated coefficient $\hat{\beta}$).

tween one DHS survey round and another. The results are reported in Appendix Tables A.8 to A.11 and are very similar to the benchmark estimates we have discussed so far.

Third, we re-estimate the association between pre-colonial features of society and contemporary violence including a number of additional controls. In Appendix Tables A.12 and A.13 we include women’s employment, acknowledging that this may be an endogenous variable but that it is still interesting to see if our estimates are robust to this inclusion. Our estimated coefficients of interest are virtually unaffected.

Another set of controls we explore is aimed at strengthening our claim that the features we measure in the Ethnographic Atlas capture, at least to a certain extent, traditional norms. One potential challenge is that the ethnographies in the Atlas were collected at different times, broadly speaking between 1840 and 1960. One may thus worry that European influence may have affected gender roles (e.g., by providing education differentially across genders, etc.). To this purpose, we perform two tests.

First, in Appendix Tables A.14 and A.15, we include a set of dummies for the year ethnographic data originates from, thus accounting for varying degrees of colonial influence at different points of data collection. The results on the influence of marriage patterns (Table A.15) are virtually identical to our benchmark estimates; those on the economic value of women (Table A.14) are also very similar: in some cases we lose statistical significance (panel B), while in others our estimates become more significant (panels C and G).

The other way in which we account for the influence of colonizers is by using a dummy for historic integration into the colonial railway network, as in Nunn and Wantchekon (2011).²¹ The results on the economic value of women (Appendix Table A.16) are very similar to those in Table 5, with the main difference being that now the variable ‘*Plough*’ positively and significantly affects also the experience of violence (panel A, columns 1 and 2) and not only attitudes. Results are also broadly unaffected when we look at marriage norms (Table A.17).

We also consider the influence of slavery. On the one hand, slavery led to female-biased sex ratios and to polygamy, as shown by Fenske (2015). On the other hand, slavery also affected social norms and attitudes (e.g., trust), as documented by Nunn and Wantchekon (2011). In Appendix Tables A.18 and A.19 we re-estimate our benchmark regressions of Tables 5

²¹Specifically, this indicator captures whether the Century Company railway network ran through the land historically inhabited by the ethnic group that a household has been classified into. Incorporating this control restricts the sample to 196 out of the original 398 ethnicities, but all of the countries remain represented.

and 7 controlling for the exposure of a respondent’s ethnic group to the slave trade.²² The results are quite consistent with what we found in Tables 5 and 7. When considering ancestral characteristics that affected the economic value of women (Table A.18), we find that ‘*Plough*’ now significantly increases women’s exposure to violence (panel A, columns 1 and 2), in addition to attitudes. Also, while ‘*Agriculture as main source*’ remains a significant predictor of attitudes, ‘*Dependence on agriculture*’ loses significance. The results on marriage patterns (Table A.19) are also robust, the main difference with respect to our benchmark being that the variable ‘*polygyny*’ is no longer statistically significant.

Our final robustness test takes into account that we have several outcome variables and adjusts for multiple hypothesis testing. In particular, we adjust p-values according to the free step-down resampling method (Westfall and Young, 1993) to control the family-wise error rate (FWER), defined as the probability of rejecting at least one true null hypothesis. In Appendix Tables A.20 and A.21 we report in parenthesis the standard errors corrected for clustering at the ethnic group level and in square brackets the FWER-adjusted p-values based on 5,000 replications. The level of significance decreases somewhat, although most of the results that were originally significant remain significant at the 5 or 10 percent level.

6 Conclusions

We have investigated the role of ancestral anthropological and cultural practices in explaining domestic violence today in the African continent – a place where violence is diffuse and often accepted. We have considered several possible hypotheses emerging from economic and sociological research regarding the determinants of violence and their acceptance among women and men. Some determinants reflect contemporary arrangements, the current position of women in society and their economic role and value. Others reflect ancient norms about gender roles at home and in the market that affect intra-family violence. These cultural effects persist over time even when the initial conditions change. In addition, ancient social norms and current conditions interact in often non obvious ways. Also, norms about marriage, such as bride prices, and living arrangements contribute to defining women’s status

²²In particular, we control for the variable $\ln[(total\ slave\ exports: Atlantic + Indian)/area(km^2)]$ used by Nunn and Wantchekon (2011), where total slave exports are measured as the number of slaves taken from a certain ethnic group for the slave trade, and “area” is the area occupied by an ethnic group in the 19th century.

in the family and in society in a way that persists over time. Our paper highlights a rich set of determinants of violence against women and their level of acceptance as a function of social norms inherited from the distant past, current conditions, and interactions between the two.

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Tables

Table 1: Matching DHS ethnicities to Ethnographic Atlas

	Number observations	Percentage observations	Number ethnicities	Percentage ethnicities
Direct	166851	44.71	128	19.57
Nunn and Wantchekon (2011)	48648	13.03	34	5.20
Ethnologue	42392	11.36	50	7.65
Murdock's book	46207	12.38	111	16.97
Multiple sources	13548	3.63	61	9.33
Joshua Project	11808	3.16	24	3.67
Other sources	364	0.10	2	0.31
Not matched	43402	11.63	244	37.31
Total	373220	100.00	654	100.00

Table 2: Summary statistics violence measures - attitudes & actual violence

	Women			Men		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
<i>Attitudes towards violence</i>						
Attitude dummy	0.471	0.499	235573	0.287	0.452	76377
Attitude index	1.363	1.770	231673	0.670	1.282	75737
<i>Violence justified if the wife:</i>						
Goes out without telling	0.319	0.466	236305	0.161	0.367	76626
Neglects the children	0.335	0.472	236691	0.184	0.388	76796
Argues with the husband	0.292	0.455	236202	0.160	0.367	76648
Refuses to have sex	0.257	0.437	235411	0.105	0.307	76663
Burns the food	0.168	0.374	236408	0.066	0.248	76847
<i>Actual violence experienced</i>						
Violence dummy	0.278	0.448	129437	-	-	-
Violence index	0.570	1.160	127936	-	-	-
<i>Types of violence:</i>						
ever been pushed/shook/thrown something at	0.098	0.297	132152	-	-	-
ever been slapped	0.207	0.405	132177	-	-	-
ever been punched/hit	0.081	0.272	132132	-	-	-
ever been kicked/dragged	0.080	0.271	128138	-	-	-
ever been strangled/burnt	0.025	0.157	132133	-	-	-
ever been physically forced into unwanted sex	0.086	0.280	132152	-	-	-

Notes: Source: Demographic and Health Survey (DHS). Survey weights are always included. All DHS African surveys with a domestic violence module and information on respondents' ethnicity and/or language are considered. There are 33 DHS survey rounds for a total of 21 sub-Saharan countries for the female sample and 28 DHS survey rounds for a total of 21 sub-Saharan countries for the male sample.

Table 3: Summary statistics ancestral characteristics

	Mean	Std. Dev.	N
<i>Ethnographic variables</i>			
Plough	0.035	0.183	323973
Agriculture main source	0.941	0.217	329818
Dependence from agriculture	0.598	0.138	329818
Dependence from gathering	0.062	0.049	329818
Dependence from hunting	0.095	0.060	329818
Dependence from fishing	0.088	0.071	329818
Dependence from husbandry	0.210	0.149	329818
Female participation agriculture	0.716	0.449	287426
Female participation gathering	0.943	0.232	143870
Female participation hunting	0	0	248861
Female participation fishing	0.131	0.334	188421
Female participation husbandry	0.338	0.463	208365
Brideprice	0.949	0.218	329818
Endogamy	0.228	0.418	315203
Stem family	0.196	0.395	328963
Polygyny	0.983	0.124	327042
Virilocality	0.797	0.398	327458

Notes: Source: Murdock's Ethnographic Atlas and Demographic and Health Survey (DHS). Survey weights are always included. All DHS African surveys with a domestic violence module and information on respondents' ethnicity and/or language are considered. There are 33 DHS survey rounds for a total of 21 sub-Saharan countries for the female sample and 28 DHS survey rounds for a total of 21 sub-Saharan countries for the male sample.

Table 4: Contemporaneous correlates

	Women						Men																										
	(2)			(3)			(4)			(5)			(6)			(7)			(8)			(9)			(10)			(11)			(12)		
	violence dummy	violence index	attitude dummy	attitude dummy	attitude index	attitude index	violence dummy	violence index	attitude dummy	attitude index	attitude index	attitude dummy	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index	attitude index			
Age	-0.006 (0.004)	-0.002 (0.006)	-0.012*** (0.004)	-0.006* (0.003)	-0.006 (0.009)	-0.006 (0.009)	-0.006* (0.004)	-0.003 (0.006)	-0.012*** (0.004)	-0.027* (0.015)	-0.027* (0.015)	-0.006* (0.003)	-0.003 (0.006)	-0.012*** (0.004)	-0.027* (0.015)	-0.027* (0.015)	-0.006* (0.003)	-0.003 (0.006)	-0.012*** (0.004)	-0.027* (0.015)	-0.027* (0.015)	-0.006* (0.003)	-0.003 (0.006)	-0.012*** (0.004)	-0.027* (0.015)	-0.027* (0.015)	-0.006* (0.003)	-0.003 (0.006)	-0.012*** (0.004)	-0.027* (0.015)			
Education (years)	-0.000 (0.001)	-0.003 (0.002)	-0.011*** (0.002)	-0.008*** (0.001)	-0.022*** (0.004)	-0.022*** (0.004)	-0.008*** (0.001)	-0.004*** (0.001)	-0.044*** (0.006)	-0.044*** (0.006)	-0.044*** (0.006)	-0.008*** (0.001)	-0.004 (0.002)	-0.011*** (0.002)	-0.044*** (0.006)	-0.044*** (0.006)	-0.008*** (0.001)	-0.004 (0.002)	-0.011*** (0.002)	-0.044*** (0.006)	-0.044*** (0.006)	-0.008*** (0.001)	-0.004 (0.002)	-0.011*** (0.002)	-0.044*** (0.006)	-0.044*** (0.006)	-0.008*** (0.001)	-0.004 (0.002)	-0.011*** (0.002)	-0.044*** (0.006)			
Wealth index	-0.004* (0.002)	-0.006 (0.005)	-0.002 (0.003)	-0.010*** (0.002)	-0.017* (0.009)	-0.029*** (0.006)	-0.010*** (0.002)	-0.006 (0.005)	-0.017* (0.009)	-0.017* (0.009)	-0.017* (0.009)	-0.010*** (0.002)	-0.006 (0.005)	-0.017* (0.009)	-0.017* (0.009)	-0.017* (0.009)	-0.010*** (0.002)	-0.006 (0.005)	-0.017* (0.009)	-0.017* (0.009)	-0.017* (0.009)	-0.010*** (0.002)	-0.006 (0.005)	-0.017* (0.009)	-0.017* (0.009)	-0.010*** (0.002)	-0.006 (0.005)	-0.017* (0.009)	-0.017* (0.009)				
Number of births	0.011*** (0.003)	0.030*** (0.008)	0.008*** (0.003)	0.004* (0.002)	0.039*** (0.010)	0.007 (0.005)	0.004* (0.002)	0.030*** (0.008)	0.008*** (0.003)	0.039*** (0.010)	0.039*** (0.010)	0.004* (0.002)	0.030*** (0.008)	0.008*** (0.003)	0.039*** (0.010)	0.039*** (0.010)	0.004* (0.002)	0.030*** (0.008)	0.008*** (0.003)	0.039*** (0.010)	0.039*** (0.010)	0.004* (0.002)	0.030*** (0.008)	0.008*** (0.003)	0.039*** (0.010)	0.039*** (0.010)	0.004* (0.002)	0.030*** (0.008)	0.008*** (0.003)				
Household size	0.003** (0.001)	0.003 (0.002)	0.004*** (0.001)	0.002* (0.001)	0.014*** (0.004)	0.008** (0.004)	0.002* (0.001)	0.003** (0.001)	0.014*** (0.004)	0.014*** (0.004)	0.014*** (0.004)	0.002* (0.001)	0.003** (0.001)	0.014*** (0.004)	0.014*** (0.004)	0.014*** (0.004)	0.002* (0.001)	0.003** (0.001)	0.014*** (0.004)	0.014*** (0.004)	0.014*** (0.004)	0.002* (0.001)	0.003** (0.001)	0.014*** (0.004)	0.014*** (0.004)	0.002* (0.001)	0.003** (0.001)	0.014*** (0.004)	0.014*** (0.004)				
Partner's age	-0.002*** (0.000)	-0.003*** (0.001)	0.000 (0.001)	-0.004*** (0.001)	0.003 (0.002)	-0.011*** (0.002)	-0.004*** (0.001)	-0.002*** (0.001)	0.000 (0.002)	0.003 (0.002)	0.003 (0.002)	-0.004*** (0.001)	-0.002*** (0.001)	-0.011*** (0.002)	0.000 (0.002)	0.003 (0.002)	-0.004*** (0.001)	-0.002*** (0.001)	0.000 (0.002)	0.003 (0.002)	0.003 (0.002)	-0.004*** (0.001)	-0.002*** (0.001)	-0.011*** (0.002)	0.000 (0.002)	0.003 (0.002)	-0.004*** (0.001)	-0.002*** (0.001)	-0.011*** (0.002)				
Partner's education	-0.001 (0.001)	-0.005* (0.003)	-0.005*** (0.002)	-0.002* (0.001)	-0.014*** (0.005)	-0.011*** (0.003)	-0.002* (0.001)	-0.005* (0.003)	-0.014*** (0.005)	-0.014*** (0.005)	-0.014*** (0.005)	-0.002* (0.001)	-0.005* (0.003)	-0.011*** (0.003)	-0.014*** (0.005)	-0.014*** (0.005)	-0.002* (0.001)	-0.005* (0.003)	-0.011*** (0.003)	-0.014*** (0.005)	-0.014*** (0.005)	-0.002* (0.001)	-0.005* (0.003)	-0.011*** (0.003)	-0.014*** (0.005)	-0.014*** (0.005)	-0.002* (0.001)	-0.005* (0.003)	-0.011*** (0.003)				
Urban	0.022*** (0.008)	0.050** (0.022)	-0.064*** (0.012)	-0.019* (0.011)	-0.252*** (0.046)	-0.077*** (0.029)	-0.019* (0.011)	0.025*** (0.008)	-0.064*** (0.012)	-0.252*** (0.046)	-0.252*** (0.046)	-0.019* (0.011)	0.025*** (0.008)	-0.064*** (0.012)	-0.252*** (0.046)	-0.252*** (0.046)	-0.019* (0.011)	0.025*** (0.008)	-0.064*** (0.012)	-0.252*** (0.046)	-0.252*** (0.046)	-0.019* (0.011)	0.025*** (0.008)	-0.064*** (0.012)	-0.252*** (0.046)	-0.252*** (0.046)	-0.019* (0.011)	0.025*** (0.008)	-0.064*** (0.012)				
Man working	-0.102*** (0.030)	-0.193*** (0.057)	-0.149*** (0.028)	0.033 (0.024)	-0.471*** (0.101)	0.067 (0.065)	0.033 (0.024)	-0.216*** (0.054)	-0.148*** (0.028)	-0.465*** (0.101)	-0.465*** (0.101)	0.035 (0.024)	-0.216*** (0.054)	-0.148*** (0.028)	-0.465*** (0.101)	-0.465*** (0.101)	0.035 (0.024)	-0.216*** (0.054)	-0.148*** (0.028)	-0.465*** (0.101)	-0.465*** (0.101)	0.035 (0.024)	-0.216*** (0.054)	-0.148*** (0.028)	-0.465*** (0.101)	-0.465*** (0.101)	0.035 (0.024)	-0.216*** (0.054)	-0.148*** (0.028)				
Woman working																																	
Constant	0.777*** (0.185)	0.972*** (0.336)	1.330*** (0.221)	0.653*** (0.227)	3.168*** (0.848)	1.037* (0.607)	0.653*** (0.227)	1.330*** (0.185)	1.330*** (0.334)	222.295 (218.771)	222.295 (218.771)	0.653*** (0.227)	1.330*** (0.185)	1.330*** (0.334)	222.295 (218.771)	222.295 (218.771)	0.653*** (0.227)	1.330*** (0.185)	1.330*** (0.334)	222.295 (218.771)	222.295 (218.771)	0.653*** (0.227)	1.330*** (0.185)	1.330*** (0.334)	222.295 (218.771)	222.295 (218.771)	0.653*** (0.227)	1.330*** (0.185)	1.330*** (0.334)				
Observations	122,027	120,599	222,727	68,763	219,198	68,188	68,763	120,337	121,765	222,295	218,771	68,627	120,337	121,765	222,295	218,771	68,627	120,337	121,765	222,295	218,771	68,627	120,337	121,765	222,295	218,771	68,627	120,337	121,765				
R-squared	0.062	0.045	0.094	0.043	0.105	0.045	0.043	0.048	0.064	0.094	0.105	0.044	0.048	0.064	0.094	0.105	0.044	0.048	0.064	0.094	0.105	0.044	0.048	0.064	0.094	0.105	0.044	0.048					
Mean dep. var	0.277	0.567	0.469	0.289	1.357	0.677	0.289	0.567	0.277	0.469	1.357	0.289	0.567	0.277	0.469	1.357	0.289	0.567	0.277	0.469	1.357	0.289	0.567	0.277	0.469	1.357	0.289	0.567					

Notes: OLS estimates. Standard errors in parentheses clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Coefficients and standard errors of the variable Wealth index are multiplied by 10000. Controls include cohort fixed effects, fixed effects for the main regions of Africa and religion dummies.

Table 5: Cultural correlates - economic value of women

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	-0.014 (0.032)	0.026 (0.109)	0.365*** (0.048)	1.361*** (0.157)	0.127** (0.059)	0.398*** (0.147)
Observations	119,446	118,018	218,486	215,097	68,068	67,500
R-squared	0.062	0.045	0.111	0.123	0.048	0.050
Mean dep. var	0.278	0.568	0.470	1.364	0.290	0.679
B. Agriculture main source	-0.003 (0.044)	-0.030 (0.103)	-0.212** (0.085)	-0.811** (0.337)	-0.099* (0.055)	-0.400** (0.162)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.062	0.046	0.098	0.110	0.045	0.048
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
C. Dependence on agriculture	-0.138* (0.084)	-0.125 (0.190)	-0.273* (0.150)	-1.088** (0.548)	-0.127 (0.121)	-0.420 (0.324)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.063	0.046	0.097	0.109	0.044	0.046
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
D. Dependence on gathering	0.067 (0.239)	-0.597 (0.564)	0.106 (0.470)	0.797 (1.715)	0.170 (0.401)	0.527 (1.058)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.062	0.046	0.094	0.105	0.044	0.045
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
E. Dependence on hunting	0.143 (0.219)	0.205 (0.542)	-0.736** (0.373)	-2.414* (1.306)	-0.574* (0.308)	-1.504* (0.794)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.062	0.046	0.099	0.109	0.047	0.048
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
F. Dependence on fishing	0.317* (0.176)	0.607 (0.425)	-0.378 (0.270)	-0.917 (0.952)	-0.008 (0.174)	-0.072 (0.452)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.064	0.047	0.097	0.106	0.043	0.045
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
G. Dependence on husbandry	-0.047 (0.063)	-0.040 (0.168)	0.567*** (0.152)	1.848*** (0.586)	0.205* (0.111)	0.619** (0.309)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.062	0.046	0.109	0.118	0.046	0.048
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parentheses clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and fixed effects for the main regions of Africa.

Table 6: Contemporaneous women employment - heterogenous effects

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	0.020 (0.034)	0.126 (0.123)	0.384*** (0.052)	1.420*** (0.170)	0.136** (0.068)	0.443** (0.184)
Woman working	0.051*** (0.007)	0.144*** (0.020)	0.013 (0.009)	0.017 (0.032)	0.001 (0.009)	0.002 (0.023)
Woman working*plough	-0.062* (0.034)	-0.184 (0.170)	-0.043 (0.035)	-0.151 (0.128)	-0.028 (0.040)	-0.139 (0.150)
Observations	119,187	117,759	218,059	214,675	67,932	67,365
R-squared	0.064	0.048	0.111	0.123	0.048	0.050
Mean dep. var	0.278	0.568	0.470	1.364	0.290	0.679
B. Agriculture main source	-0.014 (0.045)	-0.070 (0.115)	-0.199** (0.099)	-0.710* (0.393)	-0.081 (0.061)	-0.372** (0.182)
Woman working	0.058 (0.042)	0.136 (0.141)	0.039 (0.061)	0.230 (0.264)	0.037 (0.037)	0.041 (0.120)
Woman working*agric. main source	-0.008 (0.043)	0.004 (0.141)	-0.037 (0.065)	-0.255 (0.277)	-0.045 (0.043)	-0.066 (0.136)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.064	0.048	0.098	0.110	0.045	0.048
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
C. Dependence on agriculture	-0.122 (0.090)	-0.060 (0.177)	-0.305** (0.154)	-1.144** (0.577)	-0.155 (0.120)	-0.508 (0.324)
Woman working	0.078** (0.037)	0.232*** (0.090)	-0.030 (0.058)	-0.081 (0.218)	-0.036 (0.045)	-0.120 (0.110)
Woman working*dep. on agric.	-0.043 (0.054)	-0.150 (0.126)	0.051 (0.092)	0.093 (0.347)	0.048 (0.077)	0.156 (0.188)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.065	0.049	0.097	0.109	0.044	0.046
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
D. Dependence on gathering	0.281 (0.226)	-0.107 (0.482)	0.129 (0.512)	0.704 (1.845)	0.177 (0.460)	0.434 (1.202)
Woman working	0.071*** (0.012)	0.184*** (0.033)	0.001 (0.021)	-0.044 (0.075)	-0.007 (0.019)	-0.039 (0.060)
Woman working*dep. on gathering	-0.305** (0.150)	-0.692* (0.390)	-0.037 (0.211)	0.134 (0.788)	-0.014 (0.210)	0.137 (0.567)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.064	0.049	0.094	0.105	0.044	0.045
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Table 6: Contemporaneous women employment - heterogenous effects (CONTINUED)

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
E. Dependence on hunting	0.164 (0.224)	0.132 (0.512)	-0.921** (0.396)	-3.067** (1.366)	-0.757** (0.345)	-2.116** (0.893)
Woman working	0.055*** (0.017)	0.135*** (0.046)	-0.025 (0.023)	-0.124 (0.080)	-0.035 (0.026)	-0.121 (0.074)
Woman working*dep on hunting	-0.059 (0.152)	0.034 (0.376)	0.280 (0.180)	1.013 (0.634)	0.303 (0.185)	1.014* (0.531)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.064	0.048	0.099	0.109	0.048	0.049
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
F. Dependence on fishing	0.176 (0.152)	0.337 (0.337)	-0.591* (0.306)	-1.909* (1.130)	0.028 (0.219)	-0.153 (0.572)
Woman working	0.032** (0.012)	0.104*** (0.039)	-0.031* (0.019)	-0.173** (0.076)	-0.004 (0.015)	-0.042 (0.042)
Woman working*dep on fishing	0.212* (0.127)	0.409 (0.335)	0.324** (0.151)	1.506** (0.588)	-0.056 (0.132)	0.114 (0.358)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.067	0.050	0.097	0.107	0.044	0.045
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
G. Dependence on husbandry	-0.039 (0.064)	-0.057 (0.150)	0.549*** (0.167)	1.883*** (0.653)	0.205** (0.103)	0.691** (0.288)
Woman working	0.048*** (0.012)	0.119*** (0.031)	-0.003 (0.023)	-0.001 (0.089)	-0.005 (0.018)	0.009 (0.047)
Woman working*dep on husbandry	0.009 (0.074)	0.101 (0.217)	0.039 (0.116)	-0.078 (0.454)	-0.002 (0.079)	-0.154 (0.226)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.064	0.048	0.109	0.118	0.046	0.048
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parentheses clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and fixed effects for the main regions of Africa.

Table 7: Cultural correlates - marriage patterns

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Endogamy	0.093** (0.039)	0.177* (0.100)	0.081** (0.037)	0.306** (0.139)	0.086*** (0.026)	0.195*** (0.072)
Observations	116,911	115,504	213,274	209,939	65,517	64,970
R-squared	0.067	0.048	0.099	0.111	0.049	0.049
Mean dep. var	0.275	0.560	0.467	1.354	0.287	0.672
B. Virilocality	0.049** (0.023)	0.134** (0.054)	0.183*** (0.050)	0.560*** (0.185)	0.086** (0.043)	0.216* (0.115)
Observations	120,996	119,568	221,275	217,774	68,246	67,677
R-squared	0.063	0.047	0.112	0.118	0.049	0.050
Mean dep. var	0.279	0.570	0.468	1.356	0.289	0.678
C. Polygyny	0.052*** (0.017)	0.144*** (0.047)	-0.265*** (0.086)	-0.941*** (0.253)	-0.200*** (0.032)	-0.575*** (0.083)
Observations	121,221	119,793	221,254	217,762	67,846	67,277
R-squared	0.062	0.046	0.099	0.109	0.049	0.050
Mean dep. var	0.277	0.567	0.469	1.359	0.290	0.680
D. Stem Family	0.004 (0.044)	0.031 (0.105)	0.003 (0.042)	-0.007 (0.156)	-0.027 (0.035)	-0.093 (0.088)
Observations	121,707	120,279	222,245	218,736	68,585	68,010
R-squared	0.061	0.045	0.094	0.105	0.044	0.046
Mean dep. var	0.277	0.566	0.469	1.359	0.289	0.678
E. Brideprice	-0.004 (0.055)	-0.043 (0.141)	0.083 (0.129)	0.290 (0.434)	-0.052 (0.083)	-0.144 (0.232)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.062	0.046	0.095	0.106	0.044	0.046
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parentheses clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and fixed effects for the main regions of Africa.

Online Appendix - Not for publication

A1. Additional tables

Table A.1: Statistics on matching between DHS data and Murdock's Atlas

	Matched	% Matched	Not matched	% Not matched	Total (with ethnicity)	Missing ethnicity	% Missing ethnicity	Total
Panel A: by country								
Angola	4,165	0.914	391	0.086	4,556	6,152	0.575	10,708
Burkina Faso	15,741	0.952	794	0.048	16,535	1,147	0.065	17,682
Congo	9,909	0.549	8,136	0.451	18,045	8,339	0.316	26,384
Cote d'Ivoire	6,402	0.876	905	0.124	7,307	1,407	0.161	8,714
Cameroon	14,361	0.796	3,684	0.204	18,045	4,119	0.186	22,164
Ethiopia	15,100	0.918	1,347	0.082	16,447	65	0.004	16,512
Gabon	2,734	0.542	2,313	0.458	5,047	1,902	0.274	6,949
Ghana	4,150	0.868	632	0.132	4,782	191	0.038	4,973
Kenya	26,254	0.868	3,988	0.132	30,242	937	0.030	31,179
Mali	24,705	1.000	0	0.000	24,705	1,612	0.061	26,317
Malawi	47,339	0.993	319	0.007	47,658	2,104	0.042	49,762
Mozambique	9,616	0.910	950	0.090	10,566	745	0.066	11,311
Nigeria	49,364	0.855	8,376	0.145	57,740	9,202	0.137	66,942
Namibia	3,321	0.828	691	0.172	4,012	1,161	0.224	5,173
Rwanda	22,258	1.000	0	0.000	22,258	54	0.002	22,312
Sierra Leone	11,477	0.852	1,999	0.148	13,476	873	0.061	14,349
Chad	8,892	0.630	5,218	0.370	14,110	2,384	0.139	16,394
Togo	7,549	0.959	321	0.041	7,870	648	0.076	8,518
Uganda	8,622	0.871	1,280	0.129	9,902	3,288	0.249	13,190
Zambia	22,602	0.917	2,058	0.083	24,660	694	0.027	25,354
Zimbabwe	15,257	1.000	0	0.000	15,257	1,477	0.088	16,734
Total	329,818	0.884	43,402	0.116	373,220	48,401	0.115	421,621
Panel B: by gender								
Men	82,226	0.881	11,072	0.119	93,298	12,889	0.121	106,187
Women	247,592	0.885	32,330	0.115	279,922	35,512	0.113	315,434
Total	329,818	0.884	43,402	0.116	373,220	48,401	0.115	421,621

Notes: Columns 1 and 2 refer to DHS observations that we were able to match to the Ethnographic Atlas, columns 3 and 4 to DHS observations for which we had information on ethnic affiliation but that we were not able to match to the Ethnographic Atlas. Column 5 reports the sum of these two types of observations, i.e. the total number of observations for which we have information on their ethnicity. The percentages in column 2 and 4 are computed on the basis of this total. Column 6 and 7 refer to DHS observations that we were unable to match to the Ethnographic Atlas either because the data on ethnicity was completely missing or because the survey answer was not informative of the actual ethnicity of the respondent. Column 8 reports the sum of all the observation: matched, not matched, with and without ethnic information. The percentages in column 7 are computed on the basis of the total in the last column.

Table A.2: Balance table for observations not matched to Atlas

Variable	Mean matched	Mean not matched	P-value	Normalized Difference
Age	32.703	32.512	0.451	0.015
Education (years)	4.899	4.725	0.888	0.026
Wealth index	-0.012	-0.060	0.982	0.020
Number of births	4.063	4.291	0.021	-0.052
Household size	6.052	6.432	0.014	-0.081
Partner's age	37.044	37.007	0.934	0.002
Partner's education	5.476	5.487	0.832	-0.001
Urban	0.299	0.328	0.426	-0.044
man working	0.926	0.932	0.852	-0.017
woman working	0.642	0.630	0.984	0.019
violence ever	0.278	0.323	0.207	-0.070
violence index ever	0.570	0.691	0.139	-0.071
Violence attitude: Women	0.471	0.558	0.076	-0.123
Violence attitude: Men	0.287	0.362	0.018	-0.113
Violence attitude index: Women	1.363	1.671	0.088	-0.120
Violence attitude index: Men	0.670	0.868	0.030	-0.104

Notes: The first column reports the mean value of the variable on the left for DHS observations that were matched successfully to the Ethnographic Atlas, while the second column reports the mean value for observations that we were not able to match to the Ethnographic Atlas. We regress each variable on the left on a dummy equal to 1 for individuals that were matched to the Ethnographic Atlas and we test the null hypothesis that the coefficient of the dummy is not significantly different from zero. The third column reports the p-value of such test.

Table A.3: Variables used in the analysis and their sources

Variable	Source
<i>Dependent variables</i>	
Attitude dummy	DHS
Attitude index	DHS
Violence dummy	DHS
Violence index	DHS
<i>Ethnographic variables</i>	
Plough	Ethnographic Atlas
Agriculture main source	Ethnographic Atlas
Dependence from agriculture	Ethnographic Atlas
Dependence from gathering	Ethnographic Atlas
Dependence from hunting	Ethnographic Atlas
Dependence from fishing	Ethnographic Atlas
Dependence from husbandry	Ethnographic Atlas
Female participation agriculture	Ethnographic Atlas
Female participation gathering	Ethnographic Atlas
Female participation hunting	Ethnographic Atlas
Female participation fishing	Ethnographic Atlas
Female participation husbandry	Ethnographic Atlas
Brideprice	Ethnographic Atlas
Endogamy	Ethnographic Atlas
Stem family	Ethnographic Atlas
Polygyny	Ethnographic Atlas
Virilocality	Ethnographic Atlas
<i>Contemporary controls</i>	
Age	DHS
Education	DHS
Wealth index	DHS
Number of births	DHS
Household size	DHS
Partner's age	DHS
Partner's education	DHS
Woman working	DHS
Man working	DHS
Urban	DHS
Cohorts FE	DHS
Religion FE	DHS
Area FE	DHS

Notes: A detailed description of how the Ethnographic variables have been constructed is provided in Section A2 of the Appendix.

Table A.4: Pairwise correlations between cultural regressors

	Plough	Agriculture main source	Dependence from agriculture	Dependence from gathering	Dependence from hunting	Dependence from fishing	Dependence from husbandry	Brideprice	Endogamy	Stem family	Polygyny	Virilocality
Plough												
Agriculture main source	-0.327											
Dependence from agriculture	-0.149	0.627										
Dependence from gathering	-0.139	0.095	0.627									
Dependence from hunting	-0.164	-0.164	-0.139	0.627								
Dependence from fishing	-0.099	0.083	0.083	-0.099	0.627							
Dependence from husbandry	0.095	-0.300	-0.300	-0.099	0.083	0.627						
Brideprice	0.149	0.149	0.149	0.149	0.149	0.149	-0.394	0.020	0.217	0.078	0.383	0.121
Endogamy	0.006	0.006	0.006	0.006	0.006	0.006	-0.001	0.100	0.100	0.078	0.383	0.121
Stem family	0.006	0.006	0.006	0.006	0.006	0.006	-0.001	0.100	0.100	0.078	0.383	0.121
Polygyny	0.006	0.006	0.006	0.006	0.006	0.006	-0.001	0.100	0.100	0.078	0.383	0.121
Virilocality	0.006	0.006	0.006	0.006	0.006	0.006	-0.001	0.100	0.100	0.078	0.383	0.121

Table A.5: Summary statistics (controls)

	Women			Men		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
<i>Attitudes towards violence</i>						
Age	31.065	8.543	247592	37.635	9.467	82226
Education (years)	4.494	4.448	247467	6.117	4.803	82159
Wealth index	-0.010	1.999	247592	-0.019	1.950	82226
Number of births	3.820	2.662	247304	4.796	3.805	82019
Household size	6.133	3.242	247592	5.807	2.770	82226
Partner's age	39.205	11.446	237064	30.296	8.032	75920
Partner's education	5.723	5.004	232568	4.720	4.430	75884
Urban	0.296	0.457	247592	0.307	0.461	82226
Man working	0.925	0.263	234011	0.926	0.262	81985
Woman working	0.642	0.479	238466	0.619	0.483	75768
Year of birth	1979.807	9.056	247592	1973.439	10.004	82226

Notes: Source: Demographic and Health Survey (DHS). Descriptive statistics for the variable Wealth index have been obtained by dividing the wealth index factor score by 100000. Survey weights are always included. Sample coverage: all DHS African surveys with a domestic violence module and information on respondents' ethnicity and/or language are considered. There are 33 DHS survey rounds for a total of 21 sub-Saharan countries for the female sample and 28 DHS survey rounds for a total of 21 sub-Saharan countries for the male sample.

Table A.6: Cultural correlates - economic value of women (Probit & Poisson estimates)

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	-0.009 (0.032)	1.061 (0.185)	0.361*** (0.046)	2.438*** (0.388)	0.131** (0.060)	1.817*** (0.410)
Observations	119,446	118,018	218,486	215,097	68,066	67,500
Mean dep. var	0.278	0.568	0.470	1.364	0.290	0.679
B. Agriculture main source	-0.013 (0.050)	0.899 (0.187)	-0.212** (0.086)	0.652** (0.125)	-0.092* (0.054)	0.624** (0.130)
Observations	122,027	120,599	222,727	219,198	68,759	68,188
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
C. Dependence on agriculture	-0.148* (0.086)	0.769 (0.266)	-0.270* (0.150)	0.454** (0.174)	-0.120 (0.121)	0.536 (0.260)
Observations	122,027	120,599	222,727	219,198	68,759	68,188
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
D. Dependence on gathering	0.050 (0.255)	0.312 (0.365)	0.096 (0.471)	1.512 (1.680)	0.151 (0.387)	1.812 (2.565)
Observations	122,027	120,599	222,727	219,198	68,759	68,188
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
E. Dependence on hunting	0.142 (0.215)	1.417 (1.232)	-0.741* (0.379)	0.182 (0.224)	-0.598* (0.335)	0.096 (0.149)
Observations	122,027	120,599	222,727	219,198	68,759	68,188
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
F. Dependence on fishing	0.340* (0.180)	3.010 (2.227)	-0.370 (0.271)	0.537 (0.399)	-0.009 (0.176)	0.955 (0.665)
Observations	122,027	120,599	222,727	219,198	68,759	68,188
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
G. Dependence on husbandry	-0.047 (0.060)	0.949 (0.265)	0.556*** (0.151)	3.200*** (1.228)	0.200* (0.110)	2.247* (0.953)
Observations	122,027	120,599	222,727	219,198	68,759	68,188
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: Columns (1), (3) and (5) report probit estimates (marginal effects reported), while columns (2), (4) and (6) report poisson estimates (incidence-rate ratios reported, meaning that coefficients are exponentiated). Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and fixed effects for the main regions of Africa.

Table A.7: Cultural correlates - marriage patterns (Probit & Poisson estimates)

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Endogamy	0.084** (0.036)	1.279* (0.191)	0.079** (0.036)	1.236** (0.124)	0.083*** (0.025)	1.331*** (0.148)
Observations	116,911	115,504	213,274	209,939	65,513	64,970
Mean dep. var	0.275	0.560	0.467	1.354	0.287	0.672
B. Virilocality	0.042** (0.020)	1.217** (0.096)	0.181*** (0.051)	1.697** (0.375)	0.090* (0.047)	1.448 (0.340)
Observations	120,996	119,568	221,275	217,774	68,242	67,677
Mean dep. var	0.279	0.570	0.468	1.356	0.289	0.678
C. Polygyny	0.057*** (0.022)	1.372*** (0.133)	-0.262*** (0.085)	0.556*** (0.117)	-0.200*** (0.035)	0.445*** (0.075)
Observations	121,221	119,793	221,254	217,762	67,843	67,277
Mean dep. var	0.277	0.567	0.469	1.359	0.290	0.680
D. Stem Family	-0.000 (0.053)	1.050 (0.242)	0.002 (0.041)	1.004 (0.096)	-0.024 (0.034)	0.898 (0.112)
Observations	121,707	120,279	222,245	218,736	68,582	68,010
Mean dep. var	0.277	0.566	0.469	1.359	0.289	0.678
E. Brideprice	-0.010 (0.051)	0.904 (0.195)	0.081 (0.132)	1.254 (0.530)	-0.055 (0.082)	0.786 (0.259)
Observations	122,027	120,599	222,727	219,198	68,759	68,188
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: Columns (1), (3) and (5) report probit estimates (marginal effects reported), while columns (2), (4) and (6) report poisson estimates (incidence-rate ratios reported, meaning that coefficients are exponentiated). Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and fixed effects for the main regions of Africa.

Table A.8: Contemporaneous correlates (Country-round FE)

	Women			Men			Women			Men		
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index	(7) violence dummy	(8) violence index	(9) attitude dummy	(10) attitude index	(11) attitude dummy	(12) attitude index
Age	-0.016*** (0.004)	-0.025* (0.014)	-0.032*** (0.006)	-0.055*** (0.018)	-0.015*** (0.004)	-0.022* (0.013)	-0.020*** (0.005)	-0.037*** (0.015)	-0.033*** (0.006)	-0.057*** (0.018)	-0.015*** (0.004)	-0.023* (0.012)
Education (years)	-0.001 (0.001)	-0.004* (0.002)	-0.011*** (0.001)	-0.042*** (0.004)	-0.008*** (0.001)	-0.024*** (0.004)	-0.002* (0.001)	-0.005** (0.002)	-0.011*** (0.001)	-0.042*** (0.004)	-0.008*** (0.001)	-0.024*** (0.004)
Wealth index	-0.002 (0.001)	-0.004 (0.004)	-0.003 (0.002)	-0.022*** (0.008)	-0.005*** (0.002)	-0.020*** (0.005)	-0.002 (0.001)	-0.005 (0.004)	-0.003 (0.002)	-0.022*** (0.008)	-0.005*** (0.002)	-0.020*** (0.005)
Number of births	0.013*** (0.002)	0.033*** (0.006)	0.007*** (0.001)	0.029*** (0.005)	0.004*** (0.001)	0.008*** (0.003)	0.013*** (0.002)	0.032*** (0.006)	0.007*** (0.001)	0.029*** (0.005)	0.004*** (0.001)	0.008*** (0.003)
Household size	0.001* (0.001)	0.001 (0.002)	0.004*** (0.001)	0.015*** (0.003)	0.000 (0.001)	0.003 (0.003)	0.001* (0.001)	0.002 (0.002)	0.004*** (0.001)	0.015*** (0.003)	0.000 (0.001)	0.003 (0.003)
Partner's age	-0.001*** (0.000)	-0.003*** (0.001)	-0.000 (0.000)	0.000 (0.001)	-0.002*** (0.001)	-0.007*** (0.002)	-0.001*** (0.000)	-0.003*** (0.001)	-0.000 (0.000)	0.000 (0.001)	-0.003*** (0.001)	-0.008*** (0.002)
Partner's education	-0.001 (0.001)	-0.006** (0.002)	-0.003*** (0.001)	-0.009*** (0.002)	-0.004*** (0.001)	-0.014*** (0.002)	-0.001* (0.001)	-0.006** (0.002)	-0.003*** (0.001)	-0.009*** (0.002)	-0.004*** (0.001)	-0.015*** (0.002)
Urban	0.013* (0.008)	0.039* (0.021)	-0.068*** (0.009)	-0.257*** (0.033)	-0.029*** (0.008)	-0.098*** (0.022)	0.015** (0.008)	0.046*** (0.021)	-0.068*** (0.009)	-0.256*** (0.033)	-0.028*** (0.009)	-0.098*** (0.023)
Man working	-0.001 (0.014)	-0.043 (0.041)	-0.005 (0.010)	-0.044 (0.040)	0.013 (0.020)	0.014 (0.060)	-0.010 (0.013)	-0.065* (0.040)	-0.007 (0.011)	-0.049 (0.040)	0.013 (0.020)	0.014 (0.060)
Woman working							0.046*** (0.006)	0.116*** (0.015)	0.007 (0.006)	0.023 (0.027)	0.004 (0.007)	0.006 (0.020)
Constant	1.210*** (0.256)	1.926** (0.772)	2.261*** (0.360)	4.078*** (1.048)	1.144*** (0.277)	1.951** (0.825)	1.455*** (0.266)	2.543*** (0.807)	2.296*** (0.357)	4.191*** (1.049)	1.167*** (0.262)	1.982** (0.801)
Observations	122,027	120,599	222,727	219,198	68,763	68,188	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.113	0.076	0.189	0.206	0.097	0.094	0.115	0.078	0.189	0.207	0.097	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Coefficients and standard errors of the variable Wealth index are multiplied by 10000. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and country-round fixed effects.

Table A.9: Cultural correlates - economic value of women (Country-round FE)

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	0.064* (0.036)	0.208** (0.105)	0.062** (0.030)	0.238 (0.156)	0.142*** (0.033)	0.367*** (0.095)
Observations	119,446	118,018	218,486	215,097	68,068	67,500
R-squared	0.114	0.077	0.191	0.206	0.100	0.096
Mean dep. var	0.278	0.568	0.470	1.364	0.290	0.679
B. Agriculture main source	0.005 (0.030)	0.020 (0.081)	0.048 (0.031)	0.182 (0.155)	-0.004 (0.046)	-0.100 (0.141)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.113	0.076	0.189	0.207	0.097	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
C. Dependence on agriculture	-0.039 (0.062)	-0.029 (0.160)	0.073 (0.065)	0.156 (0.252)	0.051 (0.066)	0.005 (0.199)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.113	0.076	0.189	0.207	0.097	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
D. Dependence on gathering	-0.116 (0.145)	-0.480 (0.339)	0.113 (0.137)	0.538 (0.571)	-0.109 (0.179)	0.088 (0.489)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.113	0.077	0.189	0.207	0.097	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
E. Dependence on hunting	0.428** (0.170)	1.050** (0.459)	0.257* (0.134)	0.746 (0.568)	-0.100 (0.191)	-0.233 (0.539)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.114	0.078	0.189	0.207	0.097	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
F. Dependence on fishing	0.174** (0.084)	0.472** (0.204)	-0.222** (0.097)	-0.605* (0.347)	0.111 (0.092)	0.224 (0.237)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.113	0.077	0.190	0.207	0.098	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
G. Dependence on husbandry	-0.134** (0.052)	-0.389*** (0.129)	-0.060 (0.063)	-0.151 (0.286)	-0.065 (0.069)	-0.063 (0.208)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.113	0.077	0.189	0.206	0.098	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and country-round fixed effects.

Table A.9: Contemporaneous women employment - heterogenous effects (country-round FE) (CONTINUED)

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
E. Dependence on hunting	0.450*** (0.168)	0.976** (0.448)	0.211 (0.138)	0.535 (0.582)	-0.236 (0.223)	-0.696 (0.617)
Woman working	0.050*** (0.013)	0.108*** (0.033)	0.001 (0.013)	-0.007 (0.052)	-0.018 (0.018)	-0.067 (0.055)
Woman working*dep on hunting	-0.043 (0.109)	0.087 (0.268)	0.062 (0.102)	0.301 (0.419)	0.223 (0.139)	0.754* (0.406)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.116	0.080	0.190	0.207	0.098	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
F. Dependence on fishing	0.100 (0.093)	0.318 (0.220)	-0.247** (0.112)	-0.871* (0.458)	0.191 (0.134)	0.326 (0.364)
Woman working	0.037*** (0.010)	0.097*** (0.031)	0.003 (0.010)	-0.015 (0.047)	0.015 (0.010)	0.021 (0.028)
Woman working *dep on fishing	0.106 (0.094)	0.221 (0.256)	0.041 (0.078)	0.420 (0.376)	-0.122 (0.106)	-0.169 (0.296)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.115	0.079	0.190	0.207	0.098	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
G. Dependence on husbandry	-0.108** (0.048)	-0.313*** (0.121)	-0.076 (0.071)	-0.209 (0.318)	-0.043 (0.067)	0.031 (0.196)
Woman working	0.047*** (0.008)	0.123*** (0.021)	-0.001 (0.013)	-0.007 (0.053)	0.012 (0.012)	0.043 (0.031)
Woman working*dep on husbandry	-0.013 (0.052)	-0.059 (0.139)	0.040 (0.061)	0.145 (0.240)	-0.043 (0.047)	-0.189 (0.131)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.115	0.079	0.189	0.207	0.098	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and country-round fixed effects.

Table A.10: Contemporaneous women employment - heterogenous effects (country-round FE)

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	0.098** (0.041)	0.313** (0.138)	0.073** (0.030)	0.285* (0.155)	0.157*** (0.043)	0.429*** (0.132)
Woman working	0.047*** (0.006)	0.121*** (0.016)	0.008 (0.006)	0.027 (0.028)	0.008 (0.006)	0.022 (0.016)
Woman working*plough	-0.080*** (0.024)	-0.245** (0.108)	-0.024 (0.020)	-0.106 (0.080)	-0.039 (0.037)	-0.170 (0.142)
Observations	119,187	117,759	218,059	214,675	67,932	67,365
R-squared	0.117	0.079	0.191	0.207	0.100	0.096
Mean dep. var	0.278	0.568	0.470	1.364	0.290	0.679
B. Agriculture main source	-0.009 (0.038)	-0.021 (0.105)	0.068* (0.040)	0.313 (0.196)	0.009 (0.052)	-0.080 (0.156)
Woman working	0.034 (0.038)	0.075 (0.122)	0.057 (0.041)	0.352* (0.183)	0.040 (0.030)	0.069 (0.096)
Woman working*agric. main source	0.013 (0.039)	0.043 (0.123)	-0.053 (0.042)	-0.345* (0.189)	-0.038 (0.033)	-0.065 (0.107)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.115	0.078	0.190	0.207	0.097	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
C. Dependence on agriculture	-0.031 (0.059)	0.017 (0.151)	0.113* (0.065)	0.379 (0.283)	0.047 (0.074)	0.004 (0.221)
Woman working	0.067** (0.028)	0.193*** (0.070)	0.049 (0.040)	0.250 (0.159)	0.002 (0.036)	0.010 (0.082)
Woman working*dep. on agric.	-0.033 (0.043)	-0.124 (0.106)	-0.070 (0.068)	-0.378 (0.262)	0.002 (0.063)	-0.008 (0.147)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.115	0.078	0.189	0.207	0.098	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
D. Dependence on gathering	-0.004 (0.134)	-0.238 (0.301)	0.140 (0.149)	0.615 (0.647)	-0.130 (0.221)	-0.086 (0.613)
Woman working	0.058*** (0.009)	0.140*** (0.022)	0.010 (0.011)	0.031 (0.042)	0.001 (0.012)	-0.013 (0.039)
Woman working*dep. on gathering	-0.169 (0.124)	-0.357 (0.315)	-0.045 (0.116)	-0.123 (0.487)	0.041 (0.156)	0.293 (0.429)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.115	0.079	0.189	0.207	0.098	0.094
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and country-round fixed effects.

Table A.11: Cultural correlates - marriage patterns (country-round FE)

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Endogamy	0.061*** (0.021)	0.158*** (0.058)	0.000 (0.022)	0.076 (0.096)	0.022 (0.020)	0.049 (0.059)
Observations	116,911	115,504	213,274	209,939	65,517	64,970
R-squared	0.116	0.078	0.192	0.209	0.100	0.097
Mean dep. var	0.275	0.560	0.467	1.354	0.287	0.672
B. Virilocality	0.014 (0.012)	0.040 (0.028)	0.006 (0.028)	0.029 (0.100)	0.008 (0.025)	0.011 (0.071)
Observations	120,996	119,568	221,275	217,774	68,246	67,677
R-squared	0.113	0.076	0.190	0.207	0.099	0.095
Mean dep. var	0.279	0.570	0.468	1.356	0.289	0.678
C. Polygyny	0.045 (0.028)	0.152** (0.072)	0.041 (0.029)	0.192 (0.152)	-0.128*** (0.024)	-0.348*** (0.055)
Observations	121,221	119,793	221,254	217,762	67,846	67,277
R-squared	0.113	0.077	0.190	0.207	0.100	0.097
Mean dep. var	0.277	0.567	0.469	1.359	0.290	0.680
D. Stem Family	-0.028 (0.023)	-0.063 (0.058)	0.001 (0.020)	0.027 (0.081)	-0.035* (0.020)	-0.112** (0.049)
Observations	121,707	120,279	222,245	218,736	68,585	68,010
R-squared	0.113	0.077	0.189	0.206	0.098	0.095
Mean dep. var	0.277	0.566	0.469	1.359	0.289	0.678
E. Brideprice	-0.054 (0.045)	-0.155 (0.119)	0.028 (0.029)	0.118 (0.117)	-0.090*** (0.027)	-0.225*** (0.081)
Observations	122,027	120,599	222,727	219,198	68,763	68,188
R-squared	0.113	0.077	0.189	0.207	0.099	0.096
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and country-round fixed effects.

Table A.12: Economic value of women - control for woman's working status

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	-0.002 (0.030)	0.060 (0.104)	0.368*** (0.049)	1.364*** (0.159)	0.127** (0.058)	0.396*** (0.146)
Observations	119,187	117,759	218,059	214,675	67,932	67,365
R-squared	0.064	0.048	0.111	0.123	0.048	0.050
Mean dep. var	0.278	0.568	0.470	1.364	0.290	0.679
B. Agriculture main source	-0.017 (0.042)	-0.068 (0.096)	-0.213** (0.085)	-0.809** (0.338)	-0.097* (0.056)	-0.396** (0.165)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.064	0.048	0.098	0.110	0.045	0.048
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
C. Dependence on agriculture	-0.150* (0.083)	-0.156 (0.186)	-0.274* (0.151)	-1.087** (0.552)	-0.127 (0.122)	-0.417 (0.326)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.065	0.049	0.097	0.109	0.044	0.046
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
D. Dependence on gathering	0.082 (0.236)	-0.558 (0.551)	0.105 (0.470)	0.790 (1.719)	0.169 (0.400)	0.518 (1.057)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.064	0.049	0.094	0.105	0.044	0.045
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
E. Dependence on hunting	0.124 (0.218)	0.154 (0.535)	-0.738** (0.372)	-2.406* (1.304)	-0.570* (0.307)	-1.491* (0.790)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.064	0.048	0.099	0.109	0.047	0.048
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
F. Dependence on fishing	0.318* (0.171)	0.611 (0.411)	-0.377 (0.271)	-0.913 (0.956)	-0.009 (0.174)	-0.079 (0.452)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.066	0.050	0.097	0.106	0.044	0.045
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677
G. Dependence on husbandry	-0.034 (0.062)	-0.006 (0.161)	0.569*** (0.152)	1.843*** (0.586)	0.204* (0.111)	0.618** (0.310)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.064	0.048	0.109	0.118	0.046	0.048
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working, woman working, urban status, religion dummies, cohort fixed effects, and fixed effects for the main regions of Africa.

Table A.13: Marriage patterns - control for woman's working status

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Endogamy	0.092** (0.039)	0.172* (0.097)	0.081** (0.037)	0.307** (0.139)	0.086*** (0.026)	0.197*** (0.073)
Observations	116,666	115,259	212,868	209,538	65,389	64,843
R-squared	0.069	0.051	0.099	0.111	0.049	0.049
Mean dep. var	0.276	0.560	0.467	1.354	0.287	0.672
B. Virilocality	0.048** (0.023)	0.133*** (0.051)	0.183*** (0.050)	0.560*** (0.185)	0.086** (0.043)	0.215* (0.115)
Observations	120,738	119,310	220,849	217,353	68,112	67,544
R-squared	0.065	0.050	0.112	0.118	0.049	0.050
Mean dep. var	0.279	0.570	0.468	1.355	0.289	0.677
C. Polygyny	0.037** (0.016)	0.100** (0.045)	-0.267*** (0.086)	-0.938*** (0.255)	-0.199*** (0.032)	-0.571*** (0.082)
Observations	120,960	119,532	220,825	217,338	67,712	67,144
R-squared	0.064	0.048	0.099	0.109	0.049	0.050
Mean dep. var	0.277	0.567	0.469	1.358	0.290	0.680
D. Stem Family	0.005 (0.043)	0.036 (0.102)	0.003 (0.042)	-0.006 (0.157)	-0.027 (0.035)	-0.094 (0.088)
Observations	121,445	120,017	221,813	218,309	68,449	67,875
R-squared	0.064	0.048	0.094	0.105	0.044	0.046
Mean dep. var	0.277	0.566	0.469	1.358	0.289	0.678
E. Brideprice	-0.006 (0.055)	-0.049 (0.140)	0.084 (0.129)	0.296 (0.431)	-0.051 (0.082)	-0.142 (0.229)
Observations	121,765	120,337	222,295	218,771	68,627	68,053
R-squared	0.064	0.048	0.095	0.106	0.044	0.046
Mean dep. var	0.277	0.567	0.469	1.357	0.289	0.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. The bottom line reports the mean of the dependent variable. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working, woman working, urban status, religion dummies, cohort fixed effects, and fixed effects for the main regions of Africa.

Table A.14: Cultural correlates - Economic Value of Women controlling for Year of Ethnographic Atlas

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	-0.039 (0.025)	-0.043 (0.109)	0.410*** (0.049)	1.530*** (0.165)	0.116** (0.056)	0.362*** (0.130)
Observations	119446	118018	218486	215097	68068	67500
Mean dep. Variable	.278	.568	.47	1.364	.29	.679
B. Agriculture main source	0.024 (0.035)	0.067 (0.091)	-0.151 (0.113)	-0.626 (0.443)	-0.092 (0.062)	-0.417** (0.174)
C. Dependence from agriculture	-0.124 (0.084)	-0.136 (0.189)	-0.347** (0.142)	-1.276** (0.551)	-0.236** (0.108)	-0.730** (0.296)
D. Dependence from gathering	0.227 (0.196)	-0.061 (0.462)	0.521 (0.461)	1.861 (1.733)	0.249 (0.378)	0.790 (0.994)
E. Dependence from hunting	0.051 (0.245)	0.280 (0.532)	-0.780* (0.417)	-2.808* (1.565)	-0.618* (0.342)	-1.570* (0.881)
F. Dependence from fishing	0.355** (0.147)	0.788** (0.320)	-0.252 (0.245)	-0.487 (0.915)	0.032 (0.154)	0.033 (0.403)
G. Dependence from husbandry	-0.123 (0.078)	-0.295* (0.171)	0.548*** (0.171)	1.807*** (0.658)	0.260** (0.109)	0.770*** (0.294)
Observations	122027	120599	222727	219198	68763	68188
Mean dep. Variable	.277	.567	.469	1.357	.289	.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, fixed effects for the main regions of Africa and dummies for the year a country was entered into the ethnographic atlas.

Table A.15: Cultural Correlates - Marriage Patterns with controlling for Year of Ethnographic Atlas

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Endogamy	0.101*** (0.036)	0.190** (0.088)	0.089** (0.038)	0.304** (0.143)	0.095*** (0.028)	0.220*** (0.074)
Observations	116911	115504	213274	209939	65517	64970
Mean dep. Variable	.275	.56	.467	1.354	.287	.672
B. Virilocality	0.052* (0.029)	0.110* (0.057)	0.212*** (0.049)	0.669*** (0.184)	0.117*** (0.035)	0.289*** (0.096)
C. Polygyny	0.060*** (0.020)	0.205*** (0.051)	-0.288** (0.111)	-1.040*** (0.386)	-0.207*** (0.036)	-0.563*** (0.092)
D. Stem family	0.039 (0.034)	0.083 (0.080)	0.018 (0.038)	0.036 (0.154)	-0.018 (0.032)	-0.065 (0.088)
E. Bride	0.011 (0.058)	-0.034 (0.148)	0.070 (0.131)	0.251 (0.457)	-0.034 (0.081)	-0.075 (0.220)
Observations	122027	120599	222727	219198	68763	68188
Mean dep. Variable	.277	.567	.469	1.357	.289	.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, fixed effects for the main regions of Africa and dummies for the year a country was entered into the ethnographic atlas.

Table A.16: Cultural correlates - Economic Value of Women with colonial control

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	0.205*** (0.037)	0.876*** (0.164)	0.215*** (0.042)	0.799*** (0.137)	0.196 (0.130)	0.630* (0.376)
Colonial Railway	-0.010 (0.029)	-0.024 (0.066)	0.011 (0.034)	0.038 (0.128)	0.001 (0.036)	-0.006 (0.091)
Observations	89178	88864	155539	153544	46770	46413
Mean dep. Variable	.251	.52	.413	1.172	.264	.604
B. Agriculture main source	-0.048 (0.050)	-0.140 (0.138)	-0.148* (0.075)	-0.553** (0.260)	-0.232** (0.091)	-0.848*** (0.288)
Colonial Railway	-0.010 (0.029)	-0.022 (0.065)	0.009 (0.033)	0.036 (0.125)	0 (0.036)	-0.009 (0.090)
C. Dependence from agriculture	-0.095 (0.091)	-0.067 (0.216)	-0.072 (0.168)	-0.389 (0.601)	-0.000 (0.160)	-0.134 (0.430)
Colonial Railway	-0.007 (0.027)	-0.021 (0.062)	0.012 (0.032)	0.049 (0.121)	0.001 (0.035)	-0.002 (0.087)
D. Dependence from gathering	0.094 (0.257)	-0.257 (0.624)	0.379 (0.516)	2.442 (1.847)	0.351 (0.494)	1.375 (1.292)
Colonial Railway	-0.009 (0.028)	-0.029 (0.064)	0.016 (0.031)	0.079 (0.107)	0.008 (0.034)	0.023 (0.084)
E. Dependence from hunting	0.016 (0.232)	-0.266 (0.618)	-0.655** (0.324)	-1.965* (1.079)	-0.651** (0.274)	-1.625** (0.713)
Colonial Railway	-0.010 (0.029)	-0.031 (0.067)	-0.007 (0.036)	-0.015 (0.131)	-0.018 (0.036)	-0.054 (0.093)
F. Dependence from fishing	0.122 (0.126)	0.125 (0.333)	-0.589** (0.242)	-1.425* (0.758)	-0.182 (0.190)	-0.370 (0.484)
Colonial Railway	-0.009 (0.027)	-0.022 (0.064)	0.000 (0.035)	0.014 (0.129)	-0.001 (0.035)	-0.01 (0.090)
G. Dependence from husbandry	0.023 (0.102)	0.184 (0.280)	0.555** (0.213)	1.379* (0.813)	0.237 (0.180)	0.589 (0.516)
Colonial Railway	-0.011 (0.029)	-0.028 (0.067)	-0.005 (0.032)	-0.001 (0.122)	-0.012 (0.036)	-0.037 (0.093)
Observations	91385	91071	158803	156708	47418	47054
Mean dep. Variable	.251	.518	.412	1.165	.264	.602

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, fixed effects for the main regions of Africa and an indicator variable for historic integration into the colonial railway network

Table A.17: Cultural Correlates - Marriage Patterns with Colonial control

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Endogamy	0.075** (0.033)	0.198** (0.093)	0.056 (0.043)	0.247 (0.158)	0.130*** (0.039)	0.339*** (0.105)
Colonial Railway	-0.022 (0.030)	-0.056 (0.065)	-0.000 (0.033)	-0.011 (0.125)	-0.029 (0.037)	-0.085 (0.094)
Observations	88485	88187	154594	152577	45615	45272
Mean dep. Variable	.251	.518	.412	1.165	.263	.602
B. Virilocality	0.043* (0.024)	0.155** (0.065)	0.144*** (0.050)	0.386** (0.178)	0.077* (0.045)	0.185 (0.121)
Colonial Railway	-0.016 (0.029)	-0.041 (0.066)	-0.008 (0.031)	-0.012 (0.118)	-0.012 (0.034)	-0.036 (0.088)
C. Polygyny	0.026 (0.034)	0.040 (0.066)	-0.046 (0.067)	-0.233 (0.242)	-0.018 (0.197)	-0.296 (0.661)
Colonial Railway	-0.011 (0.029)	-0.023 (0.066)	0.009 (0.034)	0.033 (0.127)	0.001 (0.036)	-0.004 (0.091)
D. Stem family	-0.025 (0.035)	-0.040 (0.083)	0.013 (0.038)	0.061 (0.152)	-0.057 (0.040)	-0.168* (0.098)
Colonial Railway	-0.000 (0.023)	-0.006 (0.052)	0.003 (0.034)	0.007 (0.127)	0.022 (0.029)	0.058 (0.073)
E. Bride	-0.012 (0.076)	-0.066 (0.197)	0.158** (0.078)	0.452 (0.284)	0.033 (0.072)	0.084 (0.213)
Colonial Railway	-0.010 (0.029)	-0.020 (0.064)	-0.001 (0.032)	0.005 (0.123)	0 (0.036)	-0.008 (0.090)
Observations	91385	91071	158803	156708	47418	47054
Mean dep. Variable	.251	.518	.412	1.165	.264	.602

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, fixed effects for the main regions of Africa and an indicator variable for historic integration into the colonial railway network.

Table A.18: Cultural correlates - Economic Value of Women controlling for Slavery

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	0.206*** (0.036)	0.878*** (0.162)	0.215*** (0.040)	0.800*** (0.129)	0.197 (0.132)	0.633* (0.380)
Slave Exports	-0.005 (0.013)	-0.003 (0.033)	-0.054*** (0.019)	-0.195*** (0.071)	-0.028* (0.015)	-0.075* (0.040)
Observations	89178	88864	155539	153544	46770	46413
Mean dep. Variable	.251	.52	.413	1.172	.264	.604
B. Agriculture main source	-0.048 (0.050)	-0.144 (0.138)	-0.133 (0.081)	-0.497* (0.280)	-0.232** (0.092)	-0.847*** (0.292)
Slave Exports	-0.004 (0.013)	-0.004 (0.032)	-0.054*** (0.019)	-0.204*** (0.068)	-0.028* (0.015)	-0.081** (0.038)
C. Dependence from agriculture	-0.098 (0.106)	-0.078 (0.241)	0.034 (0.189)	0.010 (0.662)	0.040 (0.172)	-0.028 (0.456)
Slave Exports	-0.001 (0.015)	-0.002 (0.034)	-0.056*** (0.020)	-0.207*** (0.074)	-0.029* (0.016)	-0.080* (0.041)
D. Dependence from gathering	0.094 (0.296)	-0.260 (0.711)	0.095 (0.559)	1.433 (2.007)	0.191 (0.568)	0.971 (1.484)
Slave Exports	-0.003 (0.014)	-0.010 (0.035)	-0.053** (0.021)	-0.180** (0.076)	-0.024 (0.019)	-0.061 (0.050)
E. Dependence from hunting	0.033 (0.225)	-0.204 (0.594)	-0.706** (0.316)	-2.179** (1.048)	-0.617** (0.253)	-1.521** (0.653)
Slave Exports	-0.004 (0.013)	-0.006 (0.030)	-0.058*** (0.018)	-0.218*** (0.064)	-0.029** (0.012)	-0.082** (0.033)
F. Dependence from fishing	0.148 (0.125)	0.161 (0.328)	-0.464** (0.222)	-0.894 (0.655)	-0.104 (0.195)	-0.125 (0.490)
Slave Exports	-0.008 (0.013)	-0.008 (0.031)	-0.043** (0.017)	-0.183*** (0.063)	-0.025* (0.015)	-0.077** (0.039)
G. Dependence from husbandry	0.007 (0.108)	0.169 (0.296)	0.474** (0.226)	1.022 (0.856)	0.189 (0.181)	0.443 (0.513)
Slave Exports	-0.004 (0.014)	0.000 (0.035)	-0.038* (0.020)	-0.169** (0.075)	-0.022 (0.016)	-0.066 (0.043)
Observations	91385	91071	158803	156708	47418	47054
Mean dep. Variable	.251	.518	.412	1.165	.264	.602

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, fixed effects for the main regions of Africa and control for slavery: $\ln[(\text{total slave exports: Atlantic} + \text{Indian}) / \text{area (km}^2\text{)}]$.

Table A.19: Cultural Correlates - Marriage Patterns controlling for Slavery

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Endogamy	0.067** (0.032)	0.182* (0.093)	0.037 (0.045)	0.170 (0.162)	0.111*** (0.035)	0.281*** (0.095)
Slave Exports	0.001 (0.013)	0.010 (0.031)	-0.053** (0.021)	-0.200*** (0.074)	-0.021 (0.015)	-0.064 (0.040)
Observations	88485	88187	154594	152577	45615	45272
Mean dep. Variable	.251	.518	.412	1.165	.263	.602
B. Virilocality	0.040 (0.025)	0.151** (0.068)	0.127** (0.052)	0.319* (0.188)	0.068 (0.045)	0.157 (0.121)
Slave Exports	-0.001 (0.013)	0.008 (0.033)	-0.041** (0.018)	-0.174** (0.069)	-0.023 (0.016)	-0.070* (0.041)
C. Polygyny	0.023 (0.036)	0.031 (0.072)	-0.001 (0.067)	-0.063 (0.237)	-0.012 (0.212)	-0.285 (0.708)
Slave Exports	-0.005 (0.013)	-0.005 (0.032)	-0.055*** (0.019)	-0.209*** (0.069)	-0.029* (0.015)	-0.085** (0.040)
D. Stem family	-0.026 (0.039)	-0.044 (0.090)	0.007 (0.038)	0.036 (0.150)	-0.046 (0.044)	-0.141 (0.111)
Slave Exports	-0.005 (0.013)	-0.006 (0.033)	-0.054*** (0.019)	-0.204*** (0.068)	-0.029* (0.015)	-0.083** (0.041)
E. Bride	-0.017 (0.076)	-0.075 (0.200)	0.126** (0.059)	0.323 (0.215)	0.017 (0.059)	0.036 (0.176)
Slave Exports	-0.005 (0.014)	-0.008 (0.034)	-0.047*** (0.017)	-0.186*** (0.066)	-0.028* (0.015)	-0.080** (0.039)
Observations	91385	91071	158803	156708	47418	47054
Mean dep. Variable	.251	.518	.412	1.165	.264	.602

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, fixed effects for the main regions of Africa and a control for slavery: $\ln[(\text{total slave exports: Atlantic} + \text{Indian}) / \text{area (km}^2\text{)}]$.

Table A.20: Cultural correlates - economic value of women with FWER adjusted p-values

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Plough	-0.014 (0.032) [0.826]	0.026 (0.109) [0.826]	0.372*** (0.049) [0.000]	1.394*** (0.176) [0.000]	0.127** (0.059) [0.032]	0.398*** (0.147) [0.017]
Observations	119,446	118,018	120,452	118,728	68,068	67,500
R-squared	0.062	0.045	0.087	0.0963	0.048	0.050
Mean dep. var	0.278	0.568	0.427	1.201	0.290	0.679
B. Agriculture main source	-0.003 (0.044) [0.944]	-0.030 (0.103) [0.924]	-0.227*** (0.084) [0.031]	-0.874** (0.343) [0.035]	-0.099* (0.055) [0.080]	-0.400** (0.162) [0.026]
Observations	122,027	120,599	122,950	121,151	68,763	68,188
R-squared	0.062	0.046	0.078	0.088	0.045	0.048
Mean dep. var	0.277	0.567	0.426	1.196	0.289	0.677
C. Dependence on agriculture	-0.138* (0.084) [0.288]	-0.125 (0.190) [0.509]	-0.195 (0.145) [0.377]	-0.798 (0.570) [0.377]	-0.127 (0.121) [0.318]	-0.420 (0.324) [0.302]
Observations	122,027	120,599	122,950	121,151	68,763	68,188
R-squared	0.063	0.046	0.076	0.085	0.044	0.046
Mean dep. var	0.277	0.567	0.426	1.196	0.289	0.677
D. Dependence on gathering	0.067 (0.239) [0.787]	-0.597 (0.564) [0.656]	0.275 (0.416) [0.681]	1.495 (1.594) [0.6678]	0.170 (0.401) [0.789]	0.527 (1.058) [0.789]
Observations	122,027	120,599	122,950	121,151	68,763	68,188
R-squared	0.062	0.046	0.075	0.085	0.044	0.045
Mean dep. var	0.277	0.567	0.426	1.196	0.289	0.677
E. Dependence on hunting	0.143 (0.219) [0.690]	0.205 (0.542) [0.709]	-0.567 (0.357) [0.339]	-1.826 (1.315) [0.392]	-0.574* (0.308) [0.098]	-1.504* (0.794) [0.098]
Observations	122,027	120,599	122,950	121,151	68,763	68,188
R-squared	0.062	0.046	0.077	0.085	0.047	0.048
Mean dep. var	0.277	0.567	0.426	1.196	0.289	0.677
F. Dependence on fishing	0.317* (0.176) [0.230]	0.607 (0.425) [0.364]	-0.315 (0.238) [0.364]	-0.703 (0.859) [0.4092]	-0.008 (0.174) [0.975]	-0.072 (0.452) [0.975]
Observations	122,027	120,599	122,950	121,151	68,763	68,188
R-squared	0.064	0.047	0.076	0.084	0.043	0.045
Mean dep. var	0.277	0.567	0.426	1.196	0.289	0.677
G. Dependence on husbandry	-0.047 (0.063) [0.612]	-0.040 (0.168) [0.813]	0.436*** (0.161) [0.031]	1.35** (0.669) [0.120]	0.205* (0.111) [0.074]	0.619** (0.309) [0.074]
Observations	122,027	120,599	122,950	121,151	68,763	68,188
R-squared	0.062	0.046	0.083	0.089	0.046	0.048
Mean dep. var	0.277	0.567	0.426	1.196	0.289	0.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. FWER adjusted p-values in square parentheses which have been estimated using 5,000 iterations. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and fixed effects for the main regions of Africa.

Table A.21: Cultural correlates - marriage patterns with FWER adjusted p-values

	Women				Men	
	(1) violence dummy	(2) violence index	(3) attitude dummy	(4) attitude index	(5) attitude dummy	(6) attitude index
A. Endogamy	0.093** (0.039) [0.065]	0.177* (0.100) [0.204]	0.054 (0.039) [0.244]	0.184 (0.156) [0.244]	0.086*** (0.026) [0.004]	0.195*** (0.072) [0.009]
Observations	116,911	115,504	117,918	116,213	65,517	64,970
R-squared	0.067	0.048	0.077	0.086	0.049	0.049
Mean dep. var	0.275	0.560	0.425	1.193	0.287	0.672
B. Virilocality	0.049** (0.023) [0.057]	0.134** (0.054) [0.047]	0.144** (0.056) [0.047]	0.408* (0.222) [0.071]	0.086** (0.043) [0.075]	0.216* (0.115) [0.075]
Observations	120,996	119,568	121,969	120,175	68,246	67,677
R-squared	0.063	0.047	0.084	0.089	0.049	0.050
Mean dep. var	0.279	0.570	0.426	1.195	0.289	0.678
C. Polygyny	0.052*** (0.017) [0.013]	0.144*** (0.047) [0.013]	-0.223** (0.099) [0.027]	-0.801*** (0.291) [0.014]	-0.200*** (0.032) [0.000]	-0.575*** (0.083) [0.000]
Observations	121,221	119,793	122,180	120,405	67,846	67,277
R-squared	0.062	0.046	0.077	0.086	0.049	0.050
Mean dep. var	0.277	0.567	0.427	1.198	0.290	0.680
D. Stem Family	0.004 (0.044) [0.980]	0.031 (0.105) [0.980]	-0.011 (0.037) [0.980]	-0.076 (0.141) [0.943]	-0.027 (0.035) [0.450]	-0.093 (0.088) [0.413]
Observations	121,707	120,279	122,639	120,856	68,585	68,010
R-squared	0.061	0.045	0.074	0.083	0.044	0.046
Mean dep. var	0.277	0.566	0.427	1.197	0.289	0.678
E. Brideprice	-0.004 (0.055) [0.952]	-0.043 (0.141) [0.939]	0.071 (0.127) [0.939]	0.222 (0.442) [0.939]	-0.052 (0.083) [0.700]	-0.144 (0.232) [0.700]
Observations	122,027	120,599	122,950	121,151	68,763	68,188
R-squared	0.062	0.046	0.075	0.084	0.044	0.046
Mean dep. var	0.277	0.567	0.426	1.196	0.289	0.677

Notes: OLS estimates. Standard errors in parenthesis clustered at the ethnicity level. FWER adjusted p-values in square parentheses which have been estimated using 5,000 iterations. ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively. Column headings indicate the dependent variable considered. Controls include: age, education (years), wealth index, number of births, household size, partner's age and education, man working (a dummy for women's partners or male respondents who are currently working), urban status, religion dummies, cohort fixed effects, and fixed effects for the main regions of Africa.

A2. Dependent variables

The individual-level data on violence exposure are taken from the most recent wave of the Demographic and Health Surveys (DHS). The dummy called ‘*Violence ever*’, indicates whether the woman has ever been victim of at least one form of domestic violence, and the ‘*Violence index*’ variable is the sum of different forms of intimate partner violence to which the woman has ever been exposed. We need to restrict the attention to six different forms of aggressions common to all the countries included in the sample.²³ The list of violence related questions is in Appendix Table A.11.

Table A.10: Questions about domestic violence, perpetrated by spouse

Types of Violence	DHS Questions
<i>Physical Violence</i>	(1) Ever been pushed, shook or had something thrown (2) Ever been slapped (3) Ever been punched with fist or hit by something harmful (4) Ever been kicked or dragged (5) Ever been strangled or burnt
<i>Sexual Violence</i>	(6) Ever been physically forced into unwanted sexual intercourse

Notes: Source: DHS, Women’s Questionnaire.

Concerning women’s and men’s attitudes towards domestic violence, we take the individual-level data on the acceptance of violence from women and men DHS datasets, respectively. These two datasets contain a set of attitudinal measures that reflect some combination of women’s and men’s attitudes towards both spousal violence and women. Five questions in the DHS ask respondents about the circumstances under which it would be acceptable for a man to beat his wife. These circumstances are: wife goes out without telling him; wife neglects the children; wife argues with him; wife refuses to have sex with him; wife burns the food. As our dependent variable, we use a ‘*Violence attitude dummy*’, equal to 1 if the respondent believes that violence is acceptable in at least one out of the five circumstances included in the survey. In addition, we construct a ‘*Violence attitude index*’, given by the sum of the circumstances in which the respondent thinks it would be acceptable for a man to beat his wife.

²³Some questions on the occurrence of specific types of either physical or sexual violence are not included in all survey rounds.

A3 Independent variables

A3.1 Ethnographic variables

Brideprice: it is a dummy variable, indicating whether the prevalent mode of marriage prior to industrialization was characterized by brideprice or wealth to bride's family, bride service to bride's family or token brideprice. It is based on variable v6 of the Ethnographic Atlas.

Plough: the measure is constructed from variable v39 of the Ethnographic Atlas. According to this variable, ethnicities are classified into one of the following mutual exclusive categories: (i) the plough was absent; (ii) the plough existed but it was not aboriginal; and (iii) the plough was aboriginal and found in the society prior to contact. Using this categorization, we construct an indicator variable equal to 1 if the society used the plough (without distinguishing between aboriginal or not) and 0 otherwise.

Agriculture main source: it is a dummy variable, constructed from variable v42 of the Ethnographic Atlas. Ethnicities are grouped into one of the following categories: (i) gathering contributes most; (ii) fishing contributes most; (iii) hunting contributes most; (iv) pastoralism contributes most; (v) casual agriculture contributes most; (vi) extensive agriculture contributes most; (vii) intensive agriculture contributes most; (viii) two or more sources equally contribute; (ix) agriculture contributes most (type unknown). Our constructed indicator variable captures societies belonging to categories (v), (vi), (vii) or (ix).

Dependence on agriculture/gathering/hunting/fishing/husbandry: we measure the level of dependence from these five production activities using variables v1, v2, v3, v4 and v5 of Murdock's Atlas, which report the share of subsistence obtained from each activity into 9 broad bands. Our measures of dependence on these activities are generated using the middle point of these intervals.

Female participation in agriculture/gathering/hunting/fishing/husbandry: the measure uses variables v50, v51, v52, v53 and v54 from the Ethnographic Atlas. Ethnicities are grouped into one of the following categories measuring female participation in each of the activities of interest: (i) males only; (ii) males appreciably more; (iii) equal participation²⁴; (iv) females appreciably

²⁴The original classification in Murdock's Atlas makes a distinction between "differenti-

more; *(v)* females only²⁵. We construct an indicator variable that takes value 1 if there was equal gender participation, if women contributed more than men or if women were the only participants to the considered production activity.

Endogamy: it is constructed from variable v15 of the Ethnographic Atlas.

Stem family: it is constructed from variable v8 of the Ethnographic Atlas to identify ethnic groups historically characterized by stem families. The other categories in the original variable include: independent nuclear family (both monogamous and occasional polygyny), independent polyandrous families, polygynous (distinguishing between unusual co-wives pattern and usual co-wives pattern), and large extended family.

Polygyny: the measure uses variable v9 from the Ethnographic Atlas, which classifies ethnicities into the following categories based on marital composition: *(i)* independent nuclear (monogamous); *(ii)* occasional polygyny; *(iii)* preferentially sororal (cowives in same dwellings); *(iv)* preferentially sororal (cowives in separate dwellings); *(v)* non-sororal (cowives in separate dwellings); *(vi)* non-sororal (cowives in same dwellings); and *(vii)* independent polyandrous families. Our constructed indicator variable captures societies belonging to categories *(ii)*, *(iii)*, *(iv)*, *(v)* or *(vi)*.

Virilocality: it is constructed from variable v12 of the Ethnographic Atlas. Ethnicities are grouped into the following categories based on postmarital residence rules: *(i)* avunculal; *(ii)* ambilocal; *(iii)* optionally uxorilocal or avunculocal; *(iv)* optionally patrilocal or avunculocal; *(v)* matrilocal; *(vi)* neolocal; *(vii)* no common residence; *(viii)* patrilocal; *(ix)* uxorilocal; and *(x)* virilocal. We create an indicator for ethnic groups that are patrilocal or virilocal.

Nomadic/sedentary/isolated/compact settlements: this measure is based on variable v30 of Murdock's Atlas. Ethnicities are grouped into the following categories based on settlement patterns: *(i)* nomadic or fully migratory; *(ii)* seminomadic; *(iii)* semisedentary; *(iv)* compact but impermanent settlements; *(v)* neighborhood of dispersed family homesteads; *(vi)* separated

ated but equal participation" and "equal participation, no marked differentiation". Since this distinction is not relevant for our purpose, we decide to combine these two categories.

²⁵If the activity is present but sex participation is not specified or if the activity is absent, then there is no measure of female participation.

hamlets forming a single community; *(vii)* compact and permanent settlements; and *(viii)* complex settlements. Starting from this classification, we create a dummy ‘Nomadic’ equal to one for societies belonging to categories (i) or (ii), a dummy ‘Isolated’, equal to one for societies belonging to category (v), a dummy ‘Compact’, which refers to those ethnic groups belonging to categories (iv) or (vii), and a dummy ‘Sedentary’, including societies belonging to categories (iii), (v), (vi), (vii) or (viii).

A3.2 Contemporary controls

We use a set of individual covariates as contemporary controls in all our regressions. Most of them are straightforward, like age etc. The wealth index is a continuous variable, calculated by the DHS using data on a household’s ownership of selected assets, materials used for housing construction and types of water access and sanitation facilities. All these variables come from the DHS.