ANCESTRAL LIVELIHOODS AND MORAL UNIVERSALISM:
EVIDENCE FROM TRANSHUMANT PASTORALIST SOCIETIES

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ABSTRACT

Moral universalism, the extent to which individuals exhibit similar altruism and trust towards in-group and out-group members, varies widely across societies. We test the hypothesis from anthropology that the requirements of transhumant pastoralism – a livelihood in which populations seasonally migrate and herd livestock – made individuals highly interdependent and cohesive within groups but hostile to individuals beyond the radius of extended kin. Using global data, we find that historical reliance on transhumant pastoralism is strongly predictive of greater in-group relative to out-group trust. This result is consistent across countries, between residents of the same country, among second-generation migrants, and with an instrumental variable strategy. We find evidence that these results are specific to transhumant pastoralism. The effects are particularly pronounced when transhumant pastoralists interact with groups that rely on other forms of economic production and in areas that are prone to climate shocks and conflict. Finally, we explore the economic implications of limited moral universalism. We find that greater reliance on transhumant pastoralism is associated with less objective promotion criteria within firms and smaller firm size.

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1. Introduction

Moral universalism, the extent to which individuals exhibit similar altruism and trust towards in-group and out-group members, varies widely across societies. While an extensive literature has examined the determinants of levels of trust in society, focusing on the role of institutions, historical events, and social structures (see e.g. Tabellini (2010), Nunn and Wantchekon (2011), Moscona, Nunn and Robinson (2017)), we know relatively little about what affects trust of in-group members relative to out-group members (Hruschka and Henrich, 2013a,b, Enke, 2019, 2020, Schulz, Bahrami-Rad, Beauchamp and Henrich, 2019, Enke, Rodríguez-Padilla and Zimmermann, 2021a). This is important because the scope of moral values has been shown to affect a wide variety of outcomes, such as policy preferences, willingness to redistribute, and altruism (Enke, 2020, Enke et al., 2021a, Cappelen, Enke and Tungodden, 2022). Motivated by a rich anthropological literature, we examine how reliance on transhumant pastoralism, a traditional form of economic production in which populations seasonally migrate and herd livestock, shapes the scope of trust.

Transhumant pastoralism is a livelihood practiced by over 250 million people. Transhumant pastoralists raise livestock such as cattle, sheep, and camels (FAO, 2018).[1] Additionally, in contrast to sedentary pastoralist groups, they undertake some form of seasonal migration, known as transhumance. The benefit of transhumance is that it allows animals access to phytomass year-round. Therefore, transhumant pastoralist groups can live in extremely difficult environments and undertake seasonal migration when they need more access to food and water.

Anthropologists hypothesized that the demands of transhumant pastoralism led to the development of tightly-knit kin groups but hostility towards outsiders. Thus, transhumant pastoralism generates high levels of in-group relative to out-group trust (Goldschmidt, 1965, Spencer, 2013). Anthropologists highlight several features of transhumant pastoralism that may generate greater in-group trust and less out-group trust. First, transhumant pastoralists exist in extremely challenging environments that are generally unsuitable for intensive agriculture. Undertaking seasonal migration offers the possibility of existing in these environments, but also undermines traditional means of managing risk. Thus, while both sedentary and transhumant pastoralists are

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[1] Historically, 71 of 225 countries have had some reliance on transhumant pastoralism. For 31 countries, at least 10% of caloric intake is from transhumant pastoralism. At the ethnic group level, 106 of 1202 ethnic groups in the Ethnographic Atlas relied on transhumant pastoralism (Murdock, 1967).

exposed to multiple threats from the environment, such as pests, bad weather or hostile groups, sedentary groups can cope with challenging environments by constructing shelters, building fences, or forging alliances with neighboring groups. These same risk mitigation strategies are less available to transhumant groups. Additionally, transhumant pastoralist groups are only able to reap the benefits from migration if they and their animals survive the migration. The migration itself can be risky – exposing pastoralists and their capital to potentially hostile groups and terrain. This incentivizes transhumant pastoralists to rely strongly on their community for mutual assistance and protection. Thus, transhumant pastoralism as a form of economic production generates incentives for greater in-group cooperation while possibly limiting out-group trust. We test the hypothesis that transhumant pastoralism led to greater in-group relative to out-group trust using global data.

To examine the effects of transhumant pastoralism, we construct a measure of transhumant pastoralism based on the Ethnographic Atlas's coding of reliance on animal husbandry, herding animals, and settlement permanence (Murdock, 1967). This measure is similar to Becker (2019). However, we account for the extent to which the society is transhumant – by that we mean the extent to which the society is mobile. Thus, we identify groups that rely on animal husbandry of herding animals and undertake some form of migration. Given that the effects of transhumant pastoralism for trust are generated by the mobility of the society, we view this as an important modification of the pastoralism measure.

Our key outcome of interest is in-group relative to out-group trust. We use data from the Integrated Value Survey (IVS) for over 280,000 individuals across 97 countries. Following Delhey, Newton and Welzel (2011), we construct a measure of in-group relative to out-group trust by taking the difference between the extent to which individuals report trusting family members, neighbors, and other people known by the respondent ("in-group" members) relative to people met for the first time, people of another religion, and foreigners ("out-group" members). Figure 1 plots the global distribution of these values. Full moral universalism is consistent with having the same level of trust of both in-group and out-group members. With low levels of moral universalism (also known as parochialism), individuals are more trusting of in-group members relative to out-group members, regardless of the overall levels of trust.[2]

To further motivate our interest in moral universalism, we examine how policy preferences and

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[2] Appendix figure A4a illustrates the concepts of moral universalism and parochialism.

political participation vary with greater in-group relative to out-group trust using the IVS data. In Figure B9 we find that greater in-group relative to out-group trust is significantly correlated with a wide variety of preferences, such as less willingness to give income or pay taxes to protect the environment, less support for immigration and less favorable views of immigrants, as well as less participation in a wide variety of political and social organizations. These results highlight the relevance of moral universalism.

Figure 1: Distribution In-Group relative to Out-Group Trust
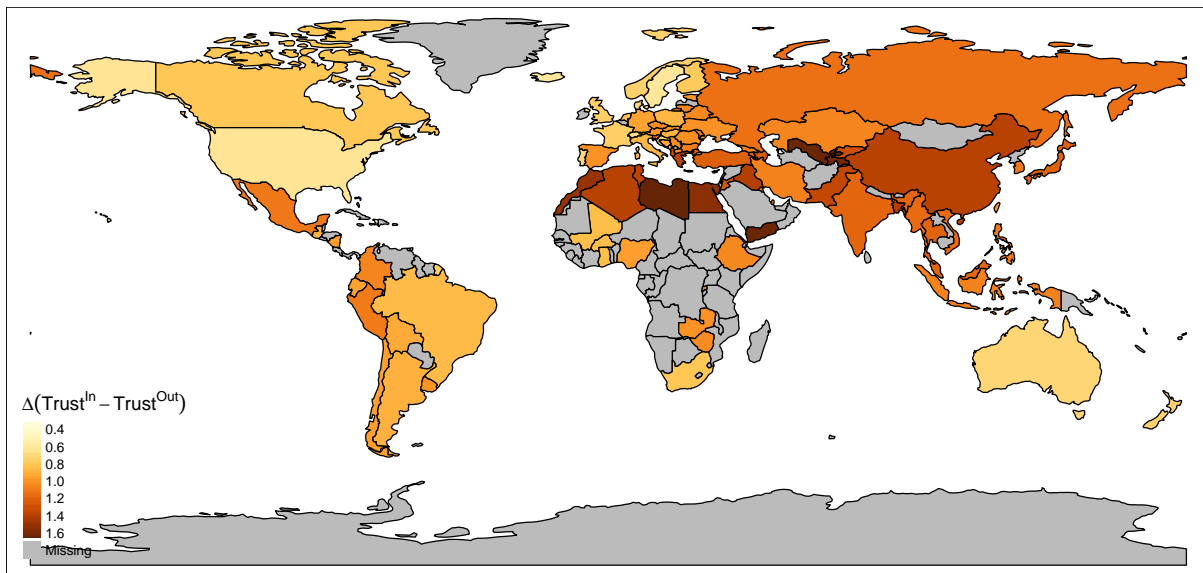
Notes: This map displays the distribution of trust in in-group relative to out-group by country. Data is from the Integrated Value Survey Time Series 2005-2014. When a country's *Delta In versus Out-Group Trust* equals zero, the population of that country trusts in-group and out-group members equally; positive values measure the degree of in-group bias.

We pursue several strategies to measure the effects of transhumant pastoralism on moral universalism. First, we examine the correlation across countries between our measure of transhumant pastoralism and in-group relative to out-group trust. We find that transhumant pastoralism has a positive and significant effect on in-group relative to out-group trust. Put differently, transhumant pastoralists exhibit more parochial trust. These results are robust to a wide variety of controls, including: contemporary and historical country-level controls, geographic controls, and ethnographic controls, as well as continent fixed effects and Lasso-selected controls (Belloni, Chernozhukov and Hansen, 2014a,b).

Second, we examine within country variation using country fixed effects. We assign exposure to transhumant pastoralism based on an individual's self-reported ethnic identity and an ethnic group's historical reliance on transhumant pastoralism in the Ethnographic Atlas. Consistent with

our cross-country results, we find a strong positive correlation between transhumant pastoralism and greater in-group relative to out-group trust. These results are robust to a wide variety of additional control variables, including exposure to conflict, population density, and region fixed effects.

It may be the case that those groups with greater in-group relative to out-group trust were more likely to rely on transhumant pastoralism or that there are omitted variables determining both the scope of trust and reliance on transhumant pastoralism. To address these identification concerns, we present instrumental variable estimates. Beck and Sieber (2010) construct measures of how suitable land is for: agriculture, animal husbandry, transhumant pastoralism, and reliance on hunting and gathering. Our proposed instrument for reliance on transhumant pastoralism is land suitability for transhumant pastoralism relative to agriculture.[3] The key identification assumption is that our instrument only affects in-group relative to out-group trust through its affect on the adoption of transhumant pastoralism. The IV results are positive, significant and of similar magnitude for both the cross-country and within-country estimates.

Additionally, we disaggregate our results by each component of the in-group and out-group trust measure. Consistent with transhumant pastoralism leading to greater internal cohesion but greater hostility to out-group members, we find evidence of greater trust of in-group members (specifically, relatives and neighbors) and less trust in all out-group members. We also find evidence that transhumant pastoralists identify more with their local community than with the broader population of the country they reside in the World Value Survey (WVS). We also show that pastoralism does not affect generalized trust levels.[4]

In an exercise similar to that in Alesina, Giuliano and Nunn (2013), we also examine second-generation immigrants for whom we have information on the parents' country of origin. We find that for second generation immigrants, both the father's and the mother's country of origin's level of reliance on transhumant pastoralism is associated with the respondent's in-group relative to out-group trust. Thus, this effect persists even in new institutional and ecological environments.

We then turn to mechanisms. First, we present evidence that the effect on in-group relative

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[3] Similar instruments have been used in the economics literature to examine the effects of pastoralism on women's agency (Becker, 2019) and belief in witchcraft (Araújo, Carrillo and Sampaio, 2021). However, these papers take the max suitability for animal husbandry or transhumant pastoralism relative to agriculture to instrument for pastoralism. In our paper we focus on suitability for mobile pastoralism relative to agriculture to instrument for mobile pastoralism.

[4] Generalized trust is measured with the following question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people". Conceptually, generalized trust is distinct from the scope of trust.

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to out-group trust is specific to transhumant pastoralism. We do not find equivalent effects for pastoralist groups or transhumant groups. This addresses the concern that we are picking up the effects of other factors that are related to pastoralism or transhumance, such as the presence of a "culture of honor" (Grosjean, 2014, Cao, Enke, Falk, Giuliano and Nunn, 2020).

Second, we explore under what conditions transhumant pastoralists are likely to develop greater in-group relative to out-group trust. We plot the estimated coefficient for transhumant pastoralism by the extent to which a country relies on transhumant pastoralism. We find that transhumant pastoralism leads to greater in-group relative to out-group trust for intermediate levels of reliance on transhumant pastoralism. Thus, when almost all calories are derived from transhumant pastoralism, we do not observe these effects on parochialism. It is only when some groups are engaged in transhumant pastoralism and others are not that we find these effects. This suggests that interacting with others engaged in different forms of economic production may be an important mechanism.

Third, motivated by theoretical work on factors that may affect the scope of trust (Hruschka and Henrich, 2013a,b), we also examine heterogeneity by exposure to drought and exposure to conflict. We hypothesize that transhumant pastoralism may be particularly likely to encourage parochialism when exposed to environmental or external stress. We find that there is a direct effect of drought on in-group relative to out-group trust. Additionally, transhumant groups are more parochial in regions that have greater drought probability. We find no direct effect of conflict on trust, but transhumant groups with greater exposure to conflict are also more parochial. While these results are merely correlational, they suggest that transhumant pastoralism may lead to greater in-group relative to out-group trust when the environment is particularly challenging.

We also take advantage of a quasi-experiment using data from the Afrobarometer to ask how those from transhumant pastoralist groups are perceived. Interviewers randomly select households to interview based on a sampling protocol, and eligible individuals are randomly selected within the household, prior to knowing the ethnic identity of the respondent (Afrobarometer, 2022). The Afrobarometer includes exit questions for the interviewer on the attitude of the respondent during the interview. Interviewers are asked to rate the extent to which the respondent is: friendly, cooperative, honest, and at ease. Across these various measures we find that interviewers perceive individuals from transhumant pastoralist societies as less friendly, less cooperative, less honest, and less at ease. This is the case regardless of whether the respondent

and enumerator share the same mother tongue. Again, this effect is specific to transhumant pastoralism, rather than to pastoralist or transhumant groups.

Finally, we explore the economic implications of limited moral universalism. We ask how limited moral universalism may constrain firm growth. Recent work on firm size in developing countries has highlighted that an over-reliance on family members may explain the lack of large firms in developing countries (Bloom, Eifert, Mahajan, McKenzie and Roberts, 2013). In areas where there is limited moral universalism, individuals may rely on family members and those known to them, rather than to hire outside of their network. Using detailed firm-level data from the Enterprise Survey for 46 countries, we find that firms located in countries where transhumant pastoralism played a dominant role in the population's ancestral lifestyle rely less on objective criteria for the promotion of non-managers. We then investigate how our transhumant pastoralism measure correlates with average firm size using data from 124 countries. We find that historical reliance on transhumant pastoralism is significantly and negatively correlated with average firm size. The result is driven by firms at the top of the size distribution. We find that these effects are driven by transhumant pastoralism, rather than by its components. As a whole, these results suggest that limited moral universalism may indeed serve as a constraint on firm growth.

We make several contributions to the literature. First, we contribute to a relatively new literature exploring the causes and consequences of moral universalism. For example, Enke (2019) explores how kinship tightness affects a variety of traits related to universal morality. Enke (2020) find that moral universalism is correlated with political views, and Cappelen et al. (2022) document substantial global variation in universalism. Other work highlights the role of moralizing big god religions in increasing the scope of moral values (Norenzayan, 2013, Norenzayan, Shariff, Gervais, Willard, McNamara, Slingerland and Henrich, 2016). For example, Bergeron (2020) finds that exposure to Christian missions decreases in-group favoritism by improving views of the out-group. Other work suggests material insecurity, inter-group conflict, and institutions may generate parochial behavior (Hruschka and Henrich, 2013a,b, Tabellini, 2008). We provide important global evidence on how historical forms of economic production shapes cultural values

related to moral universalism, and we show that this continues to have economic implications.[5]

Second, we contribute to the literature on the origins of different managerial cultures that are at the root of the large productivity gap we observe between countries. Recent work has found that firms in developing countries tend to be small and highlight the role that family ties and lack of trust may play in constraining firm growth (Bloom et al., 2013, Akcigit, Alp and Peters, 2021). We provide empirical evidence consistent with this hypothesis. Firms located in areas with greater reliance on transhumant pastoralism use less objective criteria in promotion and tend be smaller in size. These results suggest the continued important economic relevance of limited moral universalism.

Third, we contribute to the literature examining how historical livelihoods shape development and culture, specifically: restrictions on women's agency (Becker, 2019), a culture of honor (Grosjean, 2014, Cao et al., 2020), conflict (McGuirk and Nunn, 2020), belief in witchcraft (Araújo et al., 2021), and poverty and education (Michalopoulos, Putterman and Weil, 2019). For example, Cao et al. (2020) find that historical reliance on pastoralism is associated with greater conflict and norms of negative reciprocity. We focus on transhumant pastoralism, and we find consistent evidence across and within countries that the intersection of transhumance and pastoralism generates more parochial trust.

We organize the paper as follows. Section 2 develops the hypothesis, and section 3 introduces the data and investigates the correlates of transhumant pastoralism. Section 4 presents our empirical strategy and the main results. Section 5 explores mechanisms, section 6 examines the economic implications of greater in-group relative to out-group trust, and section 7 concludes.

2. Hypothesis

Transhumant pastoralist groups are mainly found along an axis stretching from the Sahel to Central Asia and passing through the Middle East and the Horn of Africa (see figure 2). While transhumant pastoralist groups are extremely diverse, they are characterized by two key features. First, they raise livestock such as cattle, sheep, horses and camel for the production of milk, meat, skins, wool or for trade (Salzman, 2004). They keep animals in herds that graze in impermanent

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[5] We also contribute to a related literature on the historical and ecological determinants of levels of trust, such as work on the slave trade (Nunn and Wantchekon, 2011), land productivity (Litina, 2016), bio-geographical conditions (Falk, Becker, Dohmen, Enke, Huffman and Sunde, 2018), and ancestral irrigation (Buggle et al., 2017, Talhelm and English, 2020).

natural pastures, generally in settings where agriculture cannot be sustained without advanced agricultural technologies due to aridity, infertile soils, or extreme temperature. This livelihood has allowed humans to inhabit regions of the world that are otherwise unsuitable for sedentary human existence. Second, they engage in some form of migration, usually seasonal, to be able to provide food and water for their livestock. The duration and distance of migration varies across groups. Additionally, transhumant pastoralist groups vary in the extent to which they: rely exclusively on livestock relative to other forms of production, are incorporated into the market economy, and are subjugated by the state.

Anthropologists hypothesized that the specific requirements of transhumant pastoralism shaped the culture of pastoralists (Goldschmidt, 1971, 1965, Edgerton, 1971, Bolton, Bolton, Gross, Koel, Michelson, Munroe and Munroe, 1976). They highlight several features of transhumant pastoralism that may have implications for in-group relative to out-group trust. First, transhumant pastoralists tend to be located in difficult environments, and thus face a myriad of threats to their herds and to themselves. These threats may be from natural factors such pests, diseases, or inclement weather, or from hostile outside groups. Livestock are particularly vulnerable to these types of threats relative to an asset such as land. While sedentary groups may also face threats from weather or other groups, the same types of risk mitigation strategies that sedentary groups use, such as fencing, shelters, or alliances with neighboring groups are less available to transhumant pastoralists. Second, although transhumance allows transhumant pastoralist groups to live in otherwise difficult environments, migration itself poses risks from hostile terrain and other groups. Migration is only beneficial if individuals and their animals survive the migration.

The combination of a difficult environment, removal of traditional risk mitigation strategies, and potential exposure to unknown hostile groups or natural threats may shape culture in the following ways. First, pastoralist groups must be cohesive and cooperate to survive harsh environments, to be able to migrate, and to protect their livestock. Anthropologists observed that the economic requirements of pastoralism made households highly interdependent and cohesive (Spencer, 2013, Goldschmidt, 1965). For example, regarding the Nuer of South Sudan:

> "A village comprises a community, linked by common residence and by a network of kinship and affinal ties, the members of which, [...], form a common clan, co-operate in many activities, and eat in one another's byres and windscreens. [...] The people of a village have a feeling of strong solidarity against other villages and great affection

for their site [...]. Members of a village fight side by side and support each other in feuds." (Evans-Pritchard, 1940, p. 115).

Cohesiveness and trust are necessary for information sharing within the group about the location of resources. Reciprocity between group members is also important to prevent the risk of overgrazing natural resources managed in common. Given that cattle herding is labor-intensive, cohesiveness allows pastoralists to rotate livestock surveillance and share labor (Naess, 2012).

The capacity to coordinate is also fundamental in transhumant pastoralists' ability to be flexible in response to other challenges of their lifestyle. For example, during the dry season, pastoralists cooperate to dig shared water holes (Evans-Pritchard, 1940, Vansina, 2004). Salzman (2004) also highlights how pastoralists institutionalize solidarity and common defense to protect their animals.

The demands of transhumant pastoralism favored forms of social organization that strengthened within-group ties, such as age grades, and social innovations to spread risk. For instance, episodes of severe droughts or diseases outbreaks that decimate herds were anticipated and prevented by entrusting part of one's capital (i.e., livestock) with "cattle kin", allowing pastoralists to spread risk (Salzman, 2004, Boutrais, 2008). Finally, given the high degree of spatial mobility of pastoralists' wealth, cooperation within groups allowed pastoralists to both defend the group's herds against raids and capture other groups' herds to recover from severe droughts and disease outbreaks (Evans-Pritchard, 1940, McCabe, 2004). As Salzman (2004, p. 12) describes, pastoralists have "protection through collective responsibility, with each individual obliged to support the others". With regards to the Samburu of Kenya,

"Neighboring families are essentially interdependent, [...], this lack of real economic independence within the homestead is concurrent with a lack of social autonomy: to a significant extent each Samburu is answerable to others for his actions and in the final resort the running of his homestead is not solely his concern." (Spencer, 2013, p. 17).

In addition to greater cohesion and trust within pastoralist groups, anthropologists also highlighted how pastoralism may shape personality traits. Specifically, they suggest that pastoralists must be independent, ready to act, responsible, and have great fortitude (Goldschmidt, 1965, Edgerton, 1971, Bolton et al., 1976, Goldschmidt, 1971, Moritz, 2008). As Goldschmidt (1965, p.404) writes, pastoralists exhibit "a high degree of independence of action; a willingness to take chances; a readiness to act, and a capacity for action; self-containment and control, especially in

the face of danger; bravery, fortitude, and the ability to withstand pain and hardship." Edgerton (1971) document the more independent-minded orientation of pastoralist's behavior as compared to farmers in East Africa; this result was replicated among Andean groups (Bolton et al., 1976). They also find that pastoralists are more open in their expression of emotion, and direct in their personal relationships. Despite greater independence of actions, they observe that pastoralists also display more cohesiveness (Edgerton, 1971, Bolton et al., 1976, Goldschmidt, 1971).

Thus, transhumant pastoralists live in difficult environments and are exposed to a myriad of threats. Traditional threat mitigation strategies are unavailable to them because they undergo migration. However, migration itself generates risk from outside groups and natural threats. Transhumant pastoralism greatly favors cooperation with in-group members and may generate hostility to unknown outsiders. Based upon ethnographies of pastoralists groups and the work from anthropology, we test the hypothesis that transhumant pastoralist communities exhibit greater in-group relative to out-group trust.

3. Data

3.1. Measuring Transhumant Pastoralism

We use the Ethnographic Atlas (hereafter EA) to construct an index of historical reliance on transhumant pastoralism (Murdock, 1967).[6] Becker (2019) constructs a continuous measure of pastoralism based on reliance on herding (v5) and the predominant type of animal husbandry (v40) in the EA. This measure defines pastoral societies are those societies that historically relied on raising herding animals, such as goats, cattle, or camelids, rather than chickens or pigs. However, it is not intended to capture mobility dimension that characterizes transhumant pastoralist groups.

Based on our reading of the ethnographic literature, the mobility of pastoralist groups is particularly important for shaping norms of cooperation and trust. Thus, we construct a measure of transhumant pastoralism that incorporates information on the permanence of a society's settlement. We interact the measure developed in (Becker, 2019) with a dummy variable equal to one if a society's settlement pattern is impermanent (variable v30 in the EA). Our resulting *TranshumantPastoralism* variable is an index from 0 to 100 in 10 percent intervals. Specifically, we

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[6] The Ethnographic Atlas is an anthropological database widely covering more than 1,200 pre-industrial societies. Recent work validates the measures (Bahrami-Rad, Becker and Henrich, 2021).

construct the index as follows:

$$TranshumantPastoralism = AnimalHusbandry * HerdingAnimals * ImpermanentSettlement$$

where $AnimalHusbandry \in$ [0;100] reflects percentage dependence on animal husbandry; $HerdingAnimals$ equals one if a society raises sheep, goats, equine animals, deer, camelids, or bovine animals, and zero otherwise; and $ImpermanentSettlement$ equals one if a society's settlement pattern is either "nomadic or fully migratory", "seminomadic", "semisedentary", "compact but impermanent settlements", or "neighborhoods of dispersed family homes", and zero otherwise.[7] Figure 2 displays the distribution of transhumant pastoralist groups in the Ethnographic Atlas and figure B6 presents the distribution using the Ethnologue.

Figure 2: Distribution of Transhumant Pastoral Groups in the Ethnographic Atlas
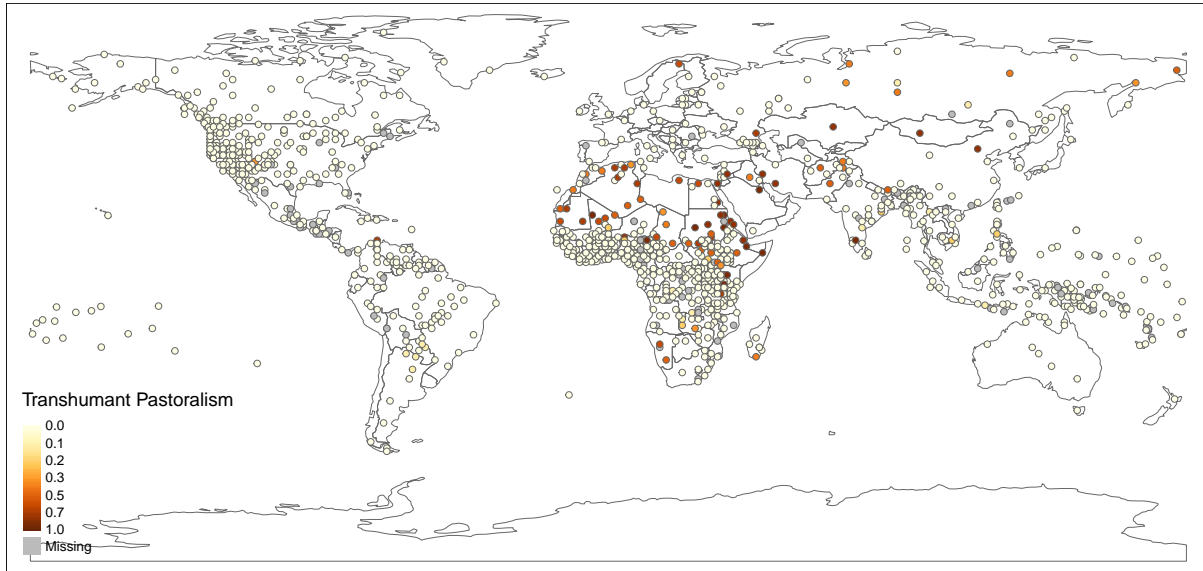
Notes: This figure displays the distribution of transhumant pastoralist groups in the Ethnographic Atlas (Murdock, 1967, Gray, 1999). Transhumant Pastoralism ϵ [0;100], is based on variable v4 (animal husbandry), variable v40 (predominant type of animal husbandry), and v30 (impermanent settlement).

3.2. Correlates of Transhumant Pastoralism

We first examine the geographic and cultural correlates of transhumant pastoralism. We estimate the following specification:

$$Y_e = \alpha + \beta TranshumantPastoralism_e + \mathbf{X'_e}\mathbf{\Gamma} + \epsilon_e \tag{1}$$

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[7] This measure of transhumant pastoralism has also been used in related papers, such as McGuirk and Nunn (2020).

where, Y_e is the outcome of interest, e.g. geographic, climatic, or ethnographic outcomes, for ethnic group e. $TranshumantPastoralism_e$ is our measure of reliance on transhumant pastoralism at the ethnic group level. $\mathbf{X'_e}$ includes a set of 6 continent fixed effects, the log number of years since an ethnic group was recorded in the EA and an ethnic group's past reliance on animal husbandry. ϵ_e is the error term.[8] By construction, our index of transhumant pastoralism is correlated with animal husbandry, one of the five dominant types of subsistence economies recorded in the EA ($\rho = .74$). To ensure that our investigation is not capturing the direct effects of reliance on animal husbandry, we include this as part of our baseline set of controls. Finally, to account for correlation between neighboring groups, we cluster the standard errors at the language-subfamily level.

In addition to basic geographic characteristics, we examine several variables that may be correlated with transhumant pastoralism and may also affect the scope of trust. These variables include suitability for agriculture (Litina, 2016), the slave trade (Nunn and Wantchekon, 2011) historical reliance on irrigation (Buggle et al., 2017), and kinship tightness (Enke, 2019, Schulz et al., 2019). Throughout the study, geographic features – including agricultural and caloric suitability, suitability for malaria, tsetse fly suitability, elevation, ruggedness, drought probability, and share of land in arid climate – are measured within a 100-kilometers radius around each ethnic group's homeland as defined in the Ethnographic Atlas.[9]

We present the correlation between transhumant pastoralism and geographic and cultural characteristics in figure 3. In Appendix B.3 we report the estimated coefficient β from equation 1 (see tables B4 and B5). To ease interpretation of the coefficient, both the outcome variable and $TranshumantPastoralism_e$ are standardized so that each point estimate represents a standard deviation change in Y_e when $TranshumantPastoralism_e$ increases by one standard deviation. Panel 3a shows that, conditional on historical animal husbandry and continent fixed effects, transhumant pastoral groups tend to originate from regions that are more arid, where droughts are more frequent, less suitable for agriculture, and with poorer soil quality. Furthermore, they

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[8] The Ethnographic Atlas does not constitute a picture of the world's ethnic groups at a single time, but rather a collection of ethnographic knowledge for societies surveyed by ethnographers and anthropologists at varying points in time. Given that ethnic groups change over time and may adopt new livelihoods as new conditions arise, the log number of years is part of our baseline set of controls. For example, at the time Evans Pritchard surveyed the Nuer, the group was slowly reducing its reliance on pastoralism for horticulture following episodes of rinderpest in the late 19th century (Evans-Pritchard, 1940, p. 57).

[9] Given that the tsetse fly is endemic to Africa only, groups outside of Africa score 0 in the tsetse fly suitability index.

are located farther from the equator, in less rugged terrain, and at lower altitudes. Finally, within Africa (the only continent with the tsetse fly), they are in areas with greater tsetse fly suitability.[10]

Figure 3: Correlates of Transhumant Pastoralism

| (a) Geographic Features | (b) Ethnographic Features |
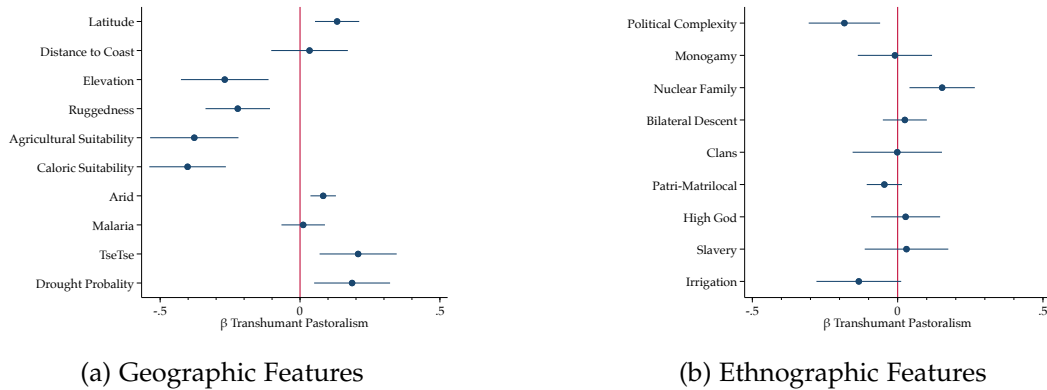
Notes: The figure plots the standardized regression coefficient of $TranshumantPastoralism_e$ for different geographic (left panel) and ethnographic (right panel) characteristics. The unit of analysis is an ethnic group from the Ethnographic Atlas. $TranshumantPastoralism_e$ is an index [0;1] measuring an ethnic group's historical reliance on transhumant pastoralism. Controls include: the (log) number of years since a group entered the EA and a group's historical reliance on animal husbandry, and a set of six continent fixed effects. Geographic characteristics are averaged within 100 kilometers around an ethnic group's homeland. Standard errors are clustered at the language sub-family level.

Panel 3b presents ethnographic correlates of reliance on transhumant pastoralism. Historically, they have less complex political institutions as measured by the number of jurisdictions beyond the local community, are more likely to be domestically organized around independent nuclear families, and are less likely to have adopted irrigation. We control for these variables when we introduce geographic and ethnographic controls in our main specification.

We also use folklore data from Michalopoulos and Xue (2021) to examine the motifs associated with transhumant pastoralism. Reassuringly, our measure of transhumant pastoralism is positively correlated with the presence of motifs such as milk, livestock, tent, and travel in folklore (see table B21 in Appendix B.3).

3.3. *Measuring In-Group and Out-Group Trust*

To construct our measure of in-group relative to out-group trust, we use the Integrated Value Survey (IVS). The full dataset contains data on trust for 285,569 respondents residing in 97 countries. In this study we are interested the difference in how much people trust in-group members relative to out-group members. Therefore, we rely on six trust questions to construct a

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[10] Note, these correlates control for reliance on animal husbandry. Thus, people who historically relied on animal husbandry for their living, which is a sedentary activity, had to settle in areas free from Tsetse fly. However, transhumant pastoralists could occupy areas where Tsetse is more prevalent because they can move.

measure of in-group relative to out-group trust. In-group trust is measured as average trust in: (i) family members, (ii) neighbors, (iii) other people known by the respondent. Out-group trust is measured as average trust in: (iv) people met for the first time, (v) people of other religion, and (vi) foreigners.[11]

Our outcome variable is defined as: $\Delta(Trust^{In} - Trust^{Out}) = AvgTrust(i,ii,iii) - AvgTrust(iv,v,vi)$. The measure varies from -3 to 3. People who do not differentially trust their in-group relative to their out-group receive a value of 0. People that are perfectly in-group biased receive a value of 3, while those who are perfectly out-group biased receive a score of -3. Variations of this measure of in-group relative to out-group trust have been used in the recent literature (Moscona et al., 2017, Buggle et al., 2017, Enke, 2019, Enke et al., 2021a).

Appendix figure B5 plots the distribution of our main outcome variable across countries. All groups show greater trust of the in-group relative to the out-group. Among the sampled countries, Libya, Uzbekistan, and Yemen have the highest level of in-group relative to out-group trust with a $\Delta(Trust^{In} - Trust^{Out})$ around 1.65; Iceland, Sweden, and the United States have the lowest levels of in-group relative to out-group trust with scores below .65.

4. Empirical Strategy and Results

This section describes our empirical strategy and presents the results. We start by documenting how an historical reliance on transhumant pastoralism correlates with average in-group relative to out-group trust across countries. We then leverage within country variation in ancestral reliance on transhumant pastoralism across individuals belonging to different ethnic groups living in a same country.

Throughout the paper, we estimate variations on the following equation:

$$\Delta(Trust^{In} - Trust^{Out}) = \alpha + \beta TranshumantPastoralism + \mathbf{X'}\boldsymbol{\Gamma} + \epsilon \qquad (2)$$

where $\Delta(Trust^{In} - Trust^{Out})$ is average in-group relative to out-group trust measured at the country or individual level. $TranshumantPastoralism$ is our index of historical reliance on transhumant pastoralism measured at the country or ethnic group level, $\mathbf{X'}$ a vector of geographic

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[11] The exact wording of the survey question is as follows: "I'd like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much or not at all?" (Read out and code one answer each) [Your family ; Your neighborhood, People you know personally, People you meet for the first time, People of another religion, People of another nationality].

and ethnographic control variables that are strong correlates of transhumant pastoralism and that may be correlated with trust through alternative independent channels: latitude, elevation, ruggedness, drought probability, aridity, suitability for agriculture and caloric suitability, political complexity, domestic organization around nuclear family, and irrigation (see section 3.1). Our baseline set of control variables include historical reliance on animal husbandry and the log number of years since an ethnic group entered the EA. ϵ is the error term.

In the cross-country analysis $\Delta(Trust^{In} - Trust^{Out})$ is averaged at the country level and survey wave across all respondents in the IVS. $TranshumantPastoralism$, as well as all other covariates, is ancestry-adjusted and computed following the methodology developed in Giuliano and Nunn (2017), which consists of matching contemporary populations to their ancestors in the EA based on the language they speak. This method allows us to construct a population-weighted average of ancestral reliance on transhumant pastoralism for every country in the world. Figure B7 displays the distribution of our measure of transhumant pastoralism across countries.

4.1. Cross-Country Estimates

We first examine the correlation between our ancestry-adjusted index of historical reliance on transhumant pastoralism and in-group relative to out-group trust across countries. We expect that greater reliance on transhumant pastoralism is associated with greater trust in the in-group relative to out-group.

Table 1 presents the estimates from equation 2.[12] Column (1) presents the unconditional estimate of the relationship between transhumant pastoralism and in-group relative to out-group trust. To ensure that our measure of transhumant pastoralism is not capturing the effects of a country's population's historical reliance on animal husbandry we control for ancestry-adjusted animal husbandry in columns (2) to (6). Columns (3) and (4) add ancestry-adjusted geographic and ethnographic baseline controls. Column (5) includes continent fixed effects. Finally, given that there are many possible potential choices of covariates, in column (6) we use Lasso to select which covariates to include in the estimation of our coefficient of interest (Belloni et al., 2014a,b).

The estimated coefficients imply that a one standard deviation increase in historical reliance on transhumant pastoralism leads to a 25 to 55% increase in in-group relative to out-group trust bias. To give one concrete example: Iraq scores .8 in our transhumant pastoralism index (highest among

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[12] Refer to figure A1a in Appendix A.7 to see countries are represented in the sample.

Table 1: Cross-Country Estimates: Transhumant Pastoralism and In-Group-Out Group Trust

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})					
	(1)	(2)	(3)	(4)	(5)	(6)
Transhumant Pastoralism [std.]	0.351***	0.504***	0.363***	0.312**	0.330**	0.297**
	(0.078)	(0.112)	(0.123)	(0.136)	(0.131)	(0.128)
Mean Dep. Var.	1.03	1.03	1.03	1.03	1.03	1.03
Num. of Clusters	97	97	97	97	97	97
Observations	194	194	194	194	194	194
Baseline Controls	No	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	No	Yes	Yes	Yes	Yes
Ethnographic Controls	No	No	No	Yes	Yes	Yes
Continent FE	No	No	No	No	Yes	Yes
Lasso-Selected Controls	No	No	No	No	No	Yes
R^2	0.338	0.357	0.530	0.598	0.630	

Notes: OLS estimates with standard errors clustered at the country level in parentheses. The unit of observation is a country and data is from the IVS. *Transhumant Pastoralism* is an index [0;1] measuring a country's population historical reliance on transhumant pastoralism. Dependent variable in every columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Baseline controls include a country's historical reliance on animal husbandry, and log number of years since a country's ethnic groups were observed in the E.A. Geographic controls are ancestry-adjusted and include: latitude, suitability for agriculture, caloric suitability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls are ancestry-adjusted and include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects included in every column. * p < 0.1; ** p < 0.05; *** p < 0.01

the sampled countries) and 1.4 (90th percentile) in delta trust. According to our point estimate, if the population of Iraq had not relied on transhumant pastoralism in the past, Iraq's average delta trust would have been 1.03 (50th percentile), a level similar to Czech Republic who scores 0 in our transhumant pastoralism index. Interestingly, our index of transhumant pastoralism alone explains one fifth of the in-sample variance in in-group trust bias.

In Appendix table B9, we show that the results are robust to controlling for proxies for historical and contemporary development such as population in 1500 CE and income per capita in the year 2000, and other societal characteristics, including ethnic fractionalization, democracy, legal origin, and proportion of a country's population belonging to the three most prevalent religions.

4.2. *Within Country Estimates*

We now turn to a within country analysis. In this section, we use rounds five to seven of the World Value Survey (WVS) which contains data on both trust and a respondent's ethnic affiliation. Historical reliance on transhumant pastoralism is assigned to a respondent based on their self-reported ethnicity. Across the three waves of the WVS we are able to merge about 40,000

respondents originating from 33 countries to their respective ethnic group in the Ethnographic Atlas.[13] This analysis complements the previous country-level analysis by leveraging variation between individuals residing in a same country. This allows us to include country fixed effects to address any country-level time invariant characteristics that affect our outcome of interest.

Table 2 documents that the pattern we observe between countries is also present when we examine within country variation. Although the size of the coefficient is smaller than in the cross-country analysis, the effect implies that a one standard deviation increase in historical reliance on transhumant pastoralism is associated with a 7% increase in in-group relative to out-group trust.

Table 2: Individual Level Estimates: Transhumant Pastoralism and In-Group Trust Bias

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})				
	(1)	(2)	(3)	(4)	(5)
Transhumant Pastoralism [std.]	0.072***	0.073**	0.071**	0.072**	0.065**
	(0.020)	(0.032)	(0.036)	(0.029)	(0.029)
Mean Dep. Var.	1.12	1.12	1.12	1.12	1.12
Num. of Clusters	114	108	106	103	103
Observations	45902	44891	43573	43466	43466
Individual Controls	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	Yes	Yes	Yes
Geographic Controls	No	Yes	No	Yes	Yes
Ethnographic Controls	No	No	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes
Lasso-Selected Controls	No	No	No	No	Yes
R^2	0.101	0.098	0.098	0.100	

Notes: OLS estimates with robust standard errors clustered at the ethnic group level in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Dependent variable in all columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Each specification controls for the respondent's age, age squared, and gender. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in every specification. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

We present robustness in Appendix B.5. Given the skewed distribution of the animal husbandry variable (v4) in the Ethnographic Atlas, we show robustness to winsorizing this variable at the 95th percentile. The estimates presented in table B11 suggest that the relationship we observe is not driven by outliers. In table B12, we find that the results are similar when we control for potentially endogenous covariates including: religion, religiosity, education, social

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[13] A list of all ethnic groups by country is available in Appendix A.6.

class, employment status, and income. We present the results with controls for population density in table B13 and conflict in table B14. We also control for the type of animals raised historically by pastoralists in table B15. In table B16 we show that our main result is robust to the inclusion of region fixed effects instead of the country fixed effects. We also explore heterogeneity by gender (see figure B10) and age cohort (see figure B11). We find that the effect is present for both men and women and across all age cohorts.

Transhumant Pastoralism and Trust: Disaggregated Effect

Next, we disaggregate the effect of transhumant pastoralism on $\Delta(Trust^{In} - Trust^{Out})$ and investigate whether the effect is driven by changes in the extent to which individuals trust in-group members or out-group members. Figure 4 estimates our model for every component of the trust index separately. Transhumant pastoral groups exhibit both greater in-group trust and lower levels of out-group trust. Within the in-group category, relatives and neighbors appear to be particularly trusted by individuals originating from transhumant pastoral groups. Transhumant pastoralists are less trusting of all out-groups: people they meet for the first time, people from different religions, and foreigners. Both greater in-group trust and less out-group trust is consistent with the incentives transhumant pastoralist groups face to cooperate with each other in the face of potentially hostile environments and outsiders.

Figure 4: Transhumant Pastoralism and Trust: Disaggregated Effect
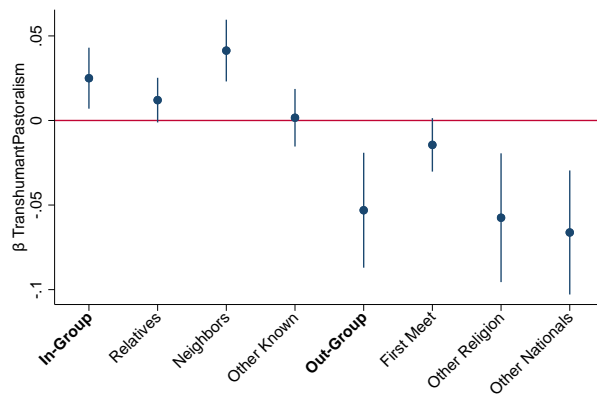
Notes: This figure presents the effect of Transhumant Pastoralism on each component of the $\Delta(Trust^{In} - Trust^{Out})$ index. The unit of observation is a respondent in the WVS ($N \approx 45{,}000$). Regression coefficients reported in table B7 in Appendix B.5.

We also examine the effect of transhumant pastoralism on generalized trust – i.e. whether an

individual thinks most people can be trusted. In Appendix table B6 we do not find any evidence that transhumant pastoralism affects the level of generalized trust.

4.3. Robustness and Additional Analysis

Instrumental Variable Results

So far, we have presented the correlation between reliance on transhumant pastoralism and moral universalism, controlling for a wide variety of geo-climatic and ethnographic factors. To address reverse causality concerns, we also present results using an instrumental variable. Specifically, the reverse causality concern is that only groups with limited moral universalism adopted transhumant pastoralism as a livelihood. Appendix table B22 presents results using the IV approach. The instrumental variable is suitability for mobile pastoralism relative to agriculture using data from Beck and Sieber (2010). The benefit of this measure is that it relies on purely ecological measures that make the adoption of transhumant pastoralism more likely. The key identification assumption is that suitability for mobile pastoralism relative to agriculture only affects in-group relative to out-group trust through its effect on the adoption of mobile pastoralism. Additional details on the IV approach are described in Appendix B.7. The IV estimates for the cross country and within country analysis are consistent with the OLS estimates. The magnitude of the IV coefficient is slightly larger. The effect of transhumant pastoralism on in-group relative to out-group trust increases by a factor of one-fifth.

Analysis with Second Generation Migrants

We examine the relation between historical reliance on transhumant pastoralism and the scope of trust among second-generations migrants. In this section, the unit of observation is a second-generation migrant surveyed in the IVS. Respondents are assigned a transhumant pastoralism value equal to the value of their mother's or father's country of birth. The results are presented in table B17. Second-generation migrants with mothers or fathers who originate from a country with greater historical reliance on transhumant pastoralism have greater in-group relative to out-group trust. These results are consistent with vertical transmission of parochial trust (Bisin and Verdier, 2001). The results are remarkable given the possibility for selection into migration, and that one might expect that individuals choosing to migrate are the ones who are least parochial.

Additional Analysis from SCCS and WVS

In table B18 in Appendix B.6 we use the Standard Cross-Cultural Sample (SCCS), a subsample of the EA for which a larger amount of information is coded, to explore the relationship between historical reliance on transhumant pastoralism and other measures of preference for the in-group. The SCCS provides information on loyalty to local community for 80 groups. We also follow Enke (2019) and generate a proxy for in-group favoritism measured as the difference between the acceptability of violence towards the out-group and the acceptability of violence towards the in-group. Despite having fewer observations, we find that reliance on transhumant pastoralism correlates with higher loyalty to local community and with higher acceptability of violence towards out-group than in-group. Together, these results provide historical support for the results we find using contemporary data.

Finally, we examine a different potential measure of parochialism. We use data from the WVS which asks the extent to which individuals feel a sense of belonging with their local group relative to the country they reside in. We find evidence that transhumant pastoralists identify more with their local community than with their broader community (see table B19 in Appendix B.6).[14]

5. Mechanisms

Guided by the anthropological literature on transhumant pastoralism, as well as theories on the causes of greater parochialism, we explore several potential mechanisms. First, we show that the effect we observe is specific to transhumant pastoralism by controlling for reliance on pastoralism and transhumance (i.e. group mobility). Second, we examine how the reference group matters – e.g. we test how the effect of transhumant pastoralism varies based on the extent to which a country historically relied on transhumant pastoralism. Third, we explore how exposure to climate shocks and conflict affects the relationship between transhumant pastoralism and moral universalism. To test for vertical transmission of cultural traits, we also examine what types of values parents transmit to their children in transhumant pastoralist societies. Finally, we leverage a quasi-experiment to examine how those from transhumant pastoralist groups are perceived.

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[14] In Appendix table B20 we find that greater historical reliance on transhumant pastoralism is associated with less confidence today in different state-related institutions including armed forces, the police, courts, the parliament, and the government.

5.1. Is the effect specific to transhumant pastoralism?

We ask whether the effect we observe is specific to transhumant pastoralism. Our measure of transhumant pastoralism reflects whether a group relies on animal husbandry and the group is mobile. However, we can test whether the effect is driven by pastoralism, being mobile, or whether the effect is specific to the combination of pastoralism and transhumance. We reestimate equation 2 controlling for pastoralism, transhumance, and transhumant pastoralism measured at the country level following the procedure detailed in section 3.1. Table 3 presents the results. We find that historical reliance on pastoralism is positively, but not significantly, correlated with greater in-group relative to out-group trust. Transhumance is negatively but not significantly related to in-group relative to out-group trust. In contrast, transhumant pastoralism – the intersection of relying on herding animals and being transhumant – remains positively and statistically significantly associated with greater parochialism.[15]

5.2. Understanding the Reference Group

As shown in figure B7, there is substantial cross-country variation in the extent to which the populations of different countries historically relied on transhumant pastoralism. For example, the population of Kuwait and Iraq historically relied on transhumant pastoralism for 80% of caloric intake while the population of Nigeria relied on transhumant pastoralism for only 20% of caloric intake.[16] We plot the effect of transhumant pastoralism on in-group relative to out-group trust based on extent of reliance on transhumant pastoralism. This allows us to ask under what conditions transhumant pastoralism generates more limited moral universalsim. In figure 5, we see that the effect of transhumant pastoralism on in-group relative to out-group trust is strongest where transhumant pastoralism represents less than 60% of historical caloric intake. However, when most or all calories are from transhumant pastoralism, the effect on in-group relative to out-group trust in no longer significant. Hence, the effect of transhumant pastoralism is strongest when it coexisted with other livelihoods, but not when all groups are transhumant pastoralists. This suggests that interacting with non-transhumant pastoralists groups may be an important factor generating the more limited scope of trust.

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[15] In Appendix table B10 we explore the effects of other livelihoods relative to agriculture on in-group relative to out-group trust. We find that only transhumant pastoralism generates greater parochialism.
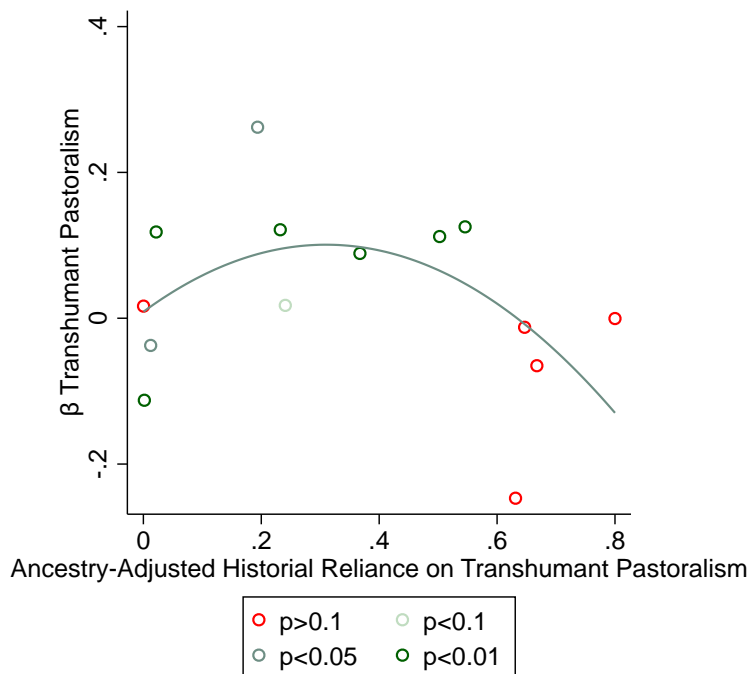
[16] The remaining caloric intake was from agriculture, fishing, hunting and gathering.

Table 3: Cross-Country Estimates: Pastoralism, Transhumant, and Transhumant Pastoralism, and In-Group Relative to Out-Group Trust

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})					
	(1)	(2)	(3)	(4)	(5)	(6)
Pastoralism [std.]	-0.262*	0.585	0.518	0.244	0.164	0.400
	(0.144)	(0.584)	(0.519)	(0.643)	(0.623)	(0.387)
Transhumant [std.]	-0.162	-0.153	-0.089	-0.073	-0.085	-0.099
	(0.142)	(0.139)	(0.112)	(0.141)	(0.120)	(0.087)
Transhumant Pastoralism [std.]	0.678***	0.660***	0.456**	0.390*	0.359*	0.394**
	(0.208)	(0.200)	(0.198)	(0.229)	(0.198)	(0.169)
Mean Dep. Var.	1.03	1.03	1.03	1.03	1.03	1.03
Num. of Clusters	97	97	97	97	97	97
Observations	194	194	194	194	194	194
Baseline Controls	No	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	No	Yes	Yes	Yes	Yes
Ethnographic Controls	No	No	No	Yes	Yes	Yes
Continent FE	No	No	No	No	Yes	Yes
Lasso-Selected Controls	No	No	No	No	No	Yes
R^2	0.353	0.363	0.533	0.599	0.564	

Notes: OLS estimates with standard errors clustered at the country level in parentheses. The unit of observation is a country and data is from the IVS. *Transhumant Pastoralism* is an index [0;1] measuring a country's population historical reliance on transhumant pastoralism. Dependent variable in every columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Baseline controls include a country's historical reliance on animal husbandry, and log number of years since a country's ethnic groups were observed in the E.A. Geographic controls are ancestry-adjusted and include: latitude, suitability for agriculture, caloric suitability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls are ancestry-adjusted and include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects included in every column. * p < 0.1; ** p < 0.05; *** p < 0.01

Figure 5: β Transhumant Pastoralism and Ancestry-Adjusted Transhumant Pastoralism

Notes: The unit of analysis is a respondent in the WVS survey. This figure plots the estimated Transhumant Pastoralism coefficient β against a country's historical reliance on Transhumant Pastoralism.

5.3. Climate Shocks and Conflict

Transhumant pastoralist groups tend to live in very difficult climates. For example, transhumant groups are in areas that tend to be particularly prone to drought and less suitable for agriculture (see Figure 3). Figure B8 maps the probability of experiencing a drought – defined as the annual precipitation in a given year being less than 75% of its long term mean (Carrão, Naumann and Barbosa, 2016). The drought probability aligns very closely with the distribution of pastoralist societies (see Figures 2 and B6). Given that drought can increase material insecurity and increase the need for mutual insurance and cooperation, we examine heterogeneity by drought exposure.

We examine how exposure to drought affects the relationship between transhumant pastoralism and parochialism in panel A of table 4. First, both drought probability and transhumant pastoralism lead to greater parochialism (columns 1 and 3). When we add the interaction between transhumant pastoralism and drought probability, the direct effect of transhumant pastoralism is no longer significant, though remains large in magnitude. The interaction term is significant (columns 2 and 4), suggesting that transhumant pastoralist groups are particularly parochial in environments that are prone to drought.

Similarly, we also explore how conflict affects the relationship between transhumant pastoralism and greater parochialism in panel B of table 4. Exposure to conflict may similarly generate incentives for greater in-group cooperation at the expense of out-group cooperation. We use conflict data from the Uppsala Conflict Data Program (UCDP, 2022).[17] We measure exposure to conflict as the natural log of (1+ Conflict Incidence). Interestingly, there is no significant correlation between conflict and greater parochialism (columns 1 and 3). The coefficient on conflict is small in magnitude and insignificant. However, transhumant pastoralist groups that are exposed to greater conflict are more parochial (columns 2 and 4). We note that these are merely correlations, as we do not have exogenous variation in exposure to conflict, and reliance on transhumant pastoralism may itself affect conflict (see e.g. McGuirk and Nunn (2020)).

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[17] Appendix A provides description of the variables used.

Table 4: Heterogeneity by Drought and Conflict

	(1)	(2)	(3)	(4)
	Dependent Variable: Δ (Trust^{In} - Trust^{Out})			
	Panel A: Heterogeneity by Drought Exposure			
Transhumant Pastoralism [std.]	0.312**	0.130	0.330**	0.149
	(0.136)	(0.146)	(0.131)	(0.145)
Drought Probability [std.]	0.348***	0.367***	0.335***	0.351***
	(0.088)	(0.090)	(0.100)	(0.099)
Transhumant Pastoralism [std.] $\times$ Drought Probabilit [std.]		0.120**		0.129*
		(0.053)		(0.066)
Mean Dep. Var.	1.03	1.03	1.03	1.03
R^2	0.598	0.606	0.630	0.639
	Panel B: Heterogeneity by Conflict Exposure			
Transhumant Pastoralism [std]	0.309**	0.018	0.317**	0.024
	(0.140)	(0.206)	(0.135)	(0.197)
ln (1 + Conflict Incidence)	0.010	0.017	0.026	0.034
	(0.026)	(0.025)	(0.024)	(0.024)
Transhumant Pastoralism [std.] $\times$ ln (1 + Conflict Incidence)		0.043*		0.043*
		(0.024)		(0.025)
Mean Dep. Var.	1.03	1.03	1.03	1.03
R^2	0.599	0.606	0.634	0.641
Num. of Clusters	97	97	97	97
Observations	194	194	194	194
Baseline Controls	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes
Ethnographic Controls	Yes	Yes	Yes	Yes
Continent FE	No	No	Yes	Yes

Notes: OLS estimates with standard errors clustered at the country level in parentheses. The unit of observation is a country and data is from the IVS. *Transhumant Pastoralism* is an index [0;1] measuring a country's population historical reliance on transhumant pastoralism. *Drought Probability* is a .5*.5 degrees grid cell's probability of annual precipitation in a given year being less than 75% of its long term mean. *Conflict Incidence* measures the number of conflicts in a given country over the period over the 1989–2016 period. Dependent variable in every columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Baseline controls include a country's historical reliance on animal husbandry, and log number of years since a country's ethnic groups were observed in the E.A. Geographic controls are ancestry-adjusted and include: latitude, suitability for agriculture, caloric suitability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls are ancestry-adjusted and include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects included in every column. * p < 0.1; ** p < 0.05; *** p < 0.01

5.4. Value Transmission

We explore vertical transmission of traits related to transhumant pastoralism to shed light on persistence. We examine which qualities individuals from transhumant pastoralist groups value in children. The WVS contains information on qualities that are important to instill in children. In the survey, respondents are presented a series of twelve to fifteen qualities that children can be encouraged to learn at home. After the interviewer reads the list of traits, respondents are asked to select up to five qualities that they consider to be especially important. From the original list we picked several qualities related to transhumant pastoralists' culture based on work from anthropology that suggests transhumant pastoralism encourages these particular personality traits. Edgerton (1971), Bolton et al. (1976), and Goldschmidt (1971) provide ethnographic evidence that transhumant pastoralists value (i) independence, (ii) responsibility, (iii) determination, and (iv) unselfishness. Additionally, they suggest that transhumant pastoralist groups are less likely to be (v) tolerant and respectful of other people, perhaps because of a culture of honor, and less likely to be (vi) obedient. In addition we present estimates for other qualities that are not necessarily related to transhumant pastoralists' culture. These other traits are: (vii) thrift, (viii) hard work, and (ix) imagination.

We present these outcomes in figure 6. The left-hand side of the plot displays the estimated coefficient for qualities associated with transhumant pastoralism. As expected, respondents originating from transhumant pastoralist groups are more likely to value independence, responsibility, determination, and unselfishness, but are less likely to value tolerance and respect for others, and obedience.

The right side of the plot reports the coefficients for the other possible qualities which are not explicitly related to the transhumant pastoralism cultural bundle, such as thrift, hard work, and imagination. Interestingly, transhumant pastoralist groups tend to value imagination. The results suggest that the values anthropologists had historically associated with transhumant pastoralists are still valued by transhumant pastoralists today, and they provide evidence consistent with the vertical transmission of cultural traits that are part of the transhumant pastoralist bundle.

Figure 6: Transhumant Pastoralism and Important Child Qualities
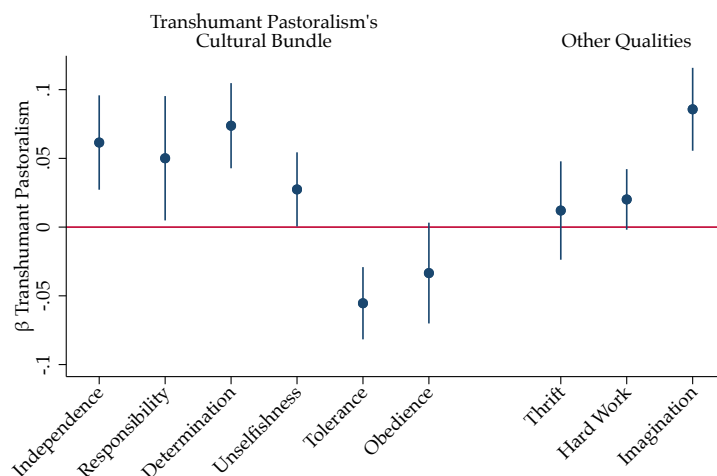
(a) Important Qualities in Child

Notes: The unit of analysis in these graphs is a respondent in the WVS survey ($N = 73{,}227$). Transhumant Pastoralism is measured at the ethnic group level. Panel 6a displays the estimated β coefficient of Transhumant Pastoralism for importance of *Independence*, *Responsibility*, *Determination*, *Tolerance*, *Obedience*, *Unselfishness*, *Thrift*, *Hard Work*, and *Imagination*.

5.5. *How are individuals from transhumant pastoralist groups viewed?*

We document that transhumant pastoralist groups are less trusting of outsiders. A natural question that arises is: how are individuals originating from transhumant pastoralist groups perceived in their interactions with others? A straightforward hypothesis stemming from our previous results is that individuals from transhumant pastoralist groups may be perceived less favorably.

The Afrobarometer presents a quasi-experimental setting in which to ask how those from transhumant pastoralist groups are viewed. In all rounds of Afrobarometer, interviewers are asked to answer a few exit questions about the respondent they interviewed at the end of every interview. These questions aim to assess how the respondent appeared during the interview. Specifically, the interviewer answers questions in the following format: "What was the respondent's attitude

towards you during the interview? Was he or she friendly, in between, or hostile?"[18]

The Afrobarometer setting presents a close to ideal setting to ask this question. An individual i, the interviewer, is asked to interact with an individual j, the respondent, to complete a task, the survey. Individual j, may or may not originate from a group that historically relied on transhumant pastoralism. Individual i is asked to repeat the task N times and at the end of each iteration, individual i is asked to assess the respondent's attitude during the task.

On average, interviewers in the Afrobarometer surveys assess the perceived attitudes of 35 respondents. We take advantage of this setting to test our hypothesis that individuals from groups that historically relied on transhumant pastoralism are perceived less favorably. This is because the interviewer is most likely an out-group member and hence less likely to be trusted.

We estimate the following specification where the unit of observation is an interview conducted by an interviewer i with a respondent j.

$$PerceivedAttitude_{ijc} = \alpha + \beta TranshumantPastoralism_j + \mathbf{X_j'\Gamma_1} + \mathbf{Z_j'\Gamma_2} + \mathbf{Z_i'\Gamma_3} + \mu_c + \theta_t + \epsilon_{ijc}$$

(3)

where $\mathbf{X_j}$ is the set of variables correlated with transhumant pastoralism identified in section 3.2; $\mathbf{Z_i'}$, and $\mathbf{Z_j'}$ are interviewer and respondent socio-demographic controls (age, age squared, gender, education, urban status); μ_c represents country fixed-effects; θ_t time fixed-effects; and ϵ is the error term. $TranshumantPastoralism_j$ is our variable of interest. As before, it measures to what extent the ethnic group of a respondent j historically relied on transhumant pastoralism.

Given that how attitudes are perceived may vary across interviewers, we exploit the fact that interviewer i conducts surveys with multiple respondents j. These respondents vary in their ethnic identity, and thus in their historical reliance on transhumant pastoralism. Hence, our preferred specification includes interviewer fixed effects, ρ_i:

$$PerceivedAttitude_{ij} = \alpha + \beta TranshumantPastoralism_j + \mathbf{X_j'\Gamma_1} + \mathbf{Z_j'\Gamma_2} + \rho_i + \epsilon_{ijc} \quad (4)$$

We examine four outcome variables: the extent to which the respondent's attitude during the interview was perceived as friendly, cooperative, honest, and at ease.

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[18] We are not the first to tabulate these questions. Michalopoulos et al. (2019) examine how livelihoods are associated with perceptions in the Afrobarometer. In their analysis, the reference group is individuals whose ancestors practice pastoralism. The authors find that pastoralists are seen as more hostile, bored, uncooperative, impatient, suspicious and dishonest. We go one step further in showing that this effect is mainly associated with transhumant pastoralism and not pastoralism (see table B25.)

Table 5 presents the results. Odd numbered columns display the coefficient estimates of $TranshumantPastoralism$ from equation 3. Individuals from groups that historically relied on transhumant pastoralism are perceived in negative terms by interviewers: they are seen as less friendly, less cooperative, less honest, and less at ease. As before, the coefficients we report are standardized into z-scores. Even numbered columns report the coefficient estimates of $TranshumantPastoralism$ from equation 4, which includes interviewer fixed effects. In these columns, identification comes from within interviewer variation in $TranshumantPastoralism$ of the respondents interviewed. The estimates follow the same pattern as in odd columns and gain in statistical significance. These estimates are in line with our hypothesis and suggest that individuals originating from transhumant pastoral groups are perceived as less prosocial. We also show in Appendix B25 that the result is specific to transhumant pastoralists, rather than just pastoralists or groups that are mobile.

Table 5: Perceived Attitudes: Evidence from Exit Questions Afrobarometer

	Dependent Variable: The Respondent Is:							
	Friendly		Cooperative		Honest		At Ease	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Transhumant Pastoralism [std.]	-0.027*	-0.028***	-0.012	-0.019**	-0.018	-0.022**	-0.010	-0.032***
	(0.012)	(0.007)	(0.012)	(0.006)	(0.016)	(0.007)	(0.014)	(0.009)
Mean Dep. Var.	0.89	0.89	0.86	0.86	0.81	0.81	0.76	0.76
Observations	139373	139282	139427	139336	139651	139560	139680	139588
Num. of Clusters	231	231	231	231	231	231	231	231
Num. of Interviewers	3855	3764	3855	3764	3854	3763	3855	3763
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	No	Yes	No	Yes	No	Yes	No
Survey-Wave FE	Yes	No	Yes	No	Yes	No	Yes	No
Interviewer FE	No	Yes	No	Yes	No	Yes	No	Yes

Notes: OLS estimates with robust standard errors clustered at the respondent's ethnic group level in parentheses. The unit of observation is a survey in the Afrobarometer surveys. *Transhumant Pastoralism* is an index [0;1] measuring a respondent's ethnic group historical reliance on transhumant pastoralism. Across specifications the dependent variables are exit questions from the Afrobarometer surveys and measure to what extent a respondent appeared *friendly*, *cooperative*, *honest*, or *at ease* an enumerator. The dependent variables are -1 to 1 categorical variables. For the outcome considered in columns (1) and (2), -1 stands for hostile, 0 for in between, and 1 for friendly. Each specification controls for the respondent's age, age squared, gender, urban status, and education. Specifications in columns (1), (3), (5), and (7) control for the symmetric characteristics of the interviewer. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in all specifications except column (2). * p < 0.1; ** p < 0.05; *** p < 0.01

6. Economic Implications: Firm Growth and Promotion Practices

We now examine the economic implication of our findings. We ask how reliance on transhumant pastoralism affects firm management and firm growth. An extensive literature documents few middle or large sized firms in developing countries and the high survival rate of unproductive firms (Tybout, 2000). The coexistence of a large number of unproductive, small firms and no firm able to scale up and acquire these less productive competitors is a puzzle. In a recent study on managerial practices in Indian textile firms, Bloom et al. (2013) suggest an interesting mechanism to explain the existence of unproductive and poorly managed firms. The authors posit that a constraint on firm growth is that business owners' do not trust or delegate decision-making positions to employees who are not members of their own family.

We examine whether transhumant pastoralism, which affects the scope of trust, is also associated with hiring practices within firms and the distribution of firm sizes across industries and countries. We use data from the World Bank's Enterprise Survey. The Enterprise Survey's sample is representative of firms with five employees or more operating in the private manufacturing and services sectors in over 120 countries.[19] Figure A3a displays the sampled countries.

First, we examine whether respondents in the Enterprise Survey (ES) who are business owners and firms' top managers report promoting non-managers based on objective criteria. Specifically, in the survey, respondents are asked to describe the primary criteria for promoting non-managers in their respective firm. Enumerators then categorized responses into one of four pre-specified items that best described the respondent's answer.[20] These categories are: (i) based solely on performance and ability, (ii) based partly on performance and ability, and partly on other factors (for example, tenure or family connections), (iii) based mainly on factors other than performance and ability (for example, tenure or family connections), and (iv) non-managers are normally not promoted. From these four categories, we create a variable measuring the degree of objective criteria in a firm's non-managers promotion practices among the establishments promoting non-managers.[21] Our outcome variable takes the value -1 if a firm's promotion policy

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[19] In the Enterprise Survey, 1200 to 1800 firm interviews are conducted in larger economies, 360 in medium size economies, and 150 in small economies. In each country, interviews are conducted in cities and regions of major economic activities.
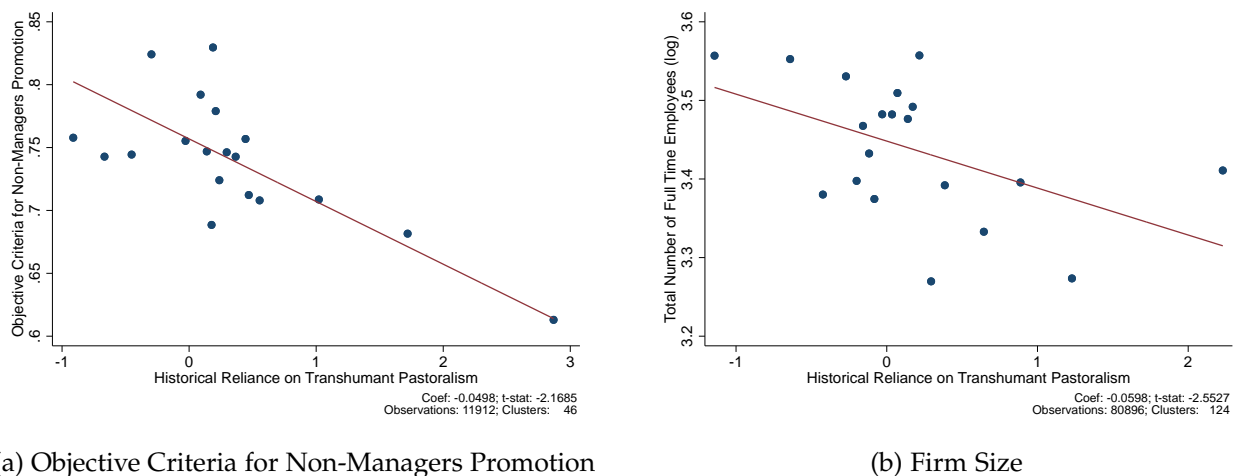
[20] In the Enterprise Survey, the question is asked as follows: Primary way of promotion of non-managers: by non-managers we mean workers excluding managers as defined in r7. Answer that best describes the management practices in the establishment should be chosen. [Section R, R10, Management Practices.]

[21] We do not include firms who do not promote non-managers. These firms represent 19% of the Enterprise Survey sample. Note, transhumant pastoralism is unrelated to likelihood of promoting non-managers.

for non-managers is based mainly on factors other than performance and ability (for example, tenure or family connections), 0 if based partly on performance and ability and partly on other factors, and 1 if based solely on performance and ability. With this outcome variable we intend to capture if a firm's promotion culture exhibits a preference for in-group members. In addition, we examine firm size, as measured by the log number of permanent employees in a firm adjusted for temporary workers.

In the analysis that follows, the unit of observation is a firm operating in a sector in a country. For firm size, the ES provides data on more than 80,000 firms operating in 51 sectors across 124 countries. The ES provides data on criteria for non-managers promotion for fewer countries (n=46) because the question was added to the survey in 2018. Hence we have information on promotion practices only for firms surveyed after that date (n=11,912).[22]

Figure 7: Transhumant Pastoralism: Economic Implications

Coef: -0.0498; t-stat: -2.1685
Observations: 11912; Clusters: 46

Coef: -0.0598; t-stat: -2.5527
Observations: 80896; Clusters: 124

(a) Objective Criteria for Non-Managers Promotion　　　　　　(b) Firm Size

Notes: Binscatter plot of the relationship between a country's historical reliance on transhumant pastoralism and adoption of objective criteria in the decisions to promote non-managers (panel 7a), and firm size in that country (panel 7b). The unit of observation is a firm, and data is from the World Bank's Enterprise Survey. *Objective Criteria for Non- Managers Promotion* is a -1 to 1 variable. It takes the value -1 if in a firm's practice for non-managers promotion is *based mainly on factors other than performance and ability (for example, tenure or family connections)*, 0 if *based partly on performance and ability, and partly on other factors (for example, tenure or family connections)*, and 1 if *based solely on performance and ability*. *Total Number of Full Time Employees* is the log transformed number of full time employees in a firm adjusted for temporary workers and is computed by the Enterprise Survey. Each dot represents the mean outcome variable for a range of our index of historical reliance on transhumant pastoralism. In the graphs we control for the ancestry-adjusted log number of years since a country's ethnic groups were observed in the EA, a set of 51 industry fixed effects, survey-round fixed effects and continent fixed effects.

Figure 7 presents the relationship between our index of ancestral reliance on transhumant pastoralism at the country level and practices for non-manager promotion (panel 7a) and firm

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[22] Technically, we have data for 17,999 on promotion practices for non-managers. Among them, the question does not apply to 13.2%, 18.73% report no promotion of non-firm managers, and 1.82% are classified as do not know.

size (panel 7b). In our analysis, we include industry and continent fixed effects. We find that in countries where the population historically relied more on transhumant pastoralism for their living, top managers and business owners put less emphasis on objective criteria in their decision to promote non-managers. As shown in Appendix figures B14a and B14b, where we examine this outcome by response, this result is due to a greater practice of nepotism in the decision to promote non-managers within firms and less reliance on ability and performance. This result speaks to the literature examining firms' limited managerial capacity and the potential negative productivity effects of "unfair" promotion policies (Lemos and Scur, 2019, Berger, Herbertz and Sliwka, 2011).

In line with our hypothesis, panel 7b shows that a country's population's historical reliance on transhumant pastoralism is significantly correlated with firm size. The effect is sizable – a one standard deviation increase in the transhumant pastoralism index is associated with a five percent decrease in average firm size. In Appendix figure B15, we present estimates from a decile regression. In this analysis, outcome variables are dummy variables that equal one if a firm's size belongs to a given decile of the firm size distribution. The estimates suggest that the negative relationship we observe between a country's population's historical reliance on transhumant pastoralism and the size of firms in that country indeed stems from a lack of large firms at the top of the distribution. These results are evidence that ancestral activities have real-world implications for contemporary development.[23] In Appendix table B24 we decompose the transhumant pastoralism bundle. We find that the effect of transhumant pastoralism on firm size is driven by the confluence of transhumance and pastoralism and not by pastoralism or transhumance alone.

7. Conclusion

This paper explores the economic origins of moral universalism, which captures the degree to which individuals favor in-group members relative to out-group members. Understanding the origins and consequences of moral universalism is important, as it shapes who individuals are willing to cooperate with and how individuals are engage with others. We document and test the hypothesis that the economic requirements of transhumant pastoralism, which made in-group

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[23] See Appendix Table B23. Even numbered columns control for level of development in the country (log-GDP in the year 2000).

members highly interdependent but hostile to individuals beyond the radius of extended kin, favored the emergence of parochial trust.

We find that historical reliance on transhumant pastoralism is a strong predictor of contemporary variation in in-group relative to out-group trust. This result is valid across countries, between residents of a same country, and among second-generations migrants who reside in the same country but whose parents originate from different countries. We provide evidence for a causal interpretation of our main result using an instrumental variable approach based on the suitability for transhumant pastoralism relative to agriculture of an individual's ethnic group.

We explore various mechanisms for our results. First, the effect we observe is specific to the confluence of transhumance and pastoralism, and therefore unlikely to be driven by traits associated with pastoralism, such as a culture of honor or exposure to conflict. We also find that the effect on parochialism is largest in places that do not rely exclusively on transhumant pastoralism. This suggests that an important driver of our observed effect is interactions with non-transhumant pastoralists.

Consistent with various literature on drivers of parochial behavior, we find that transhumant pastoralists groups are particularly likely to exhibit limited moral universalism when exposed to greater environmental instability, either in the form of conflict or drought. Additionally, parents in transhumant pastoralist groups continue to favor cultural traits that are part of the transhumant cultural bundle. In a quasi-experimental setting, we find that individuals from transhumant pastoralist groups are viewed negatively by strangers.

We study the economic implications of our findings. We show that firms are smaller where transhumant pastoralism played a more substantial role in shaping people's cultures. Specifically, there are fewer firms at the top of the firms' size distribution. We show that this may be one consequence of managers' and business owners' incapacity to trust others beyond their respective in-group. Relatedly, we also find that promotion criteria is less likely to be objective.

Our paper provides important evidence on one potential historical driver of differences in moral universalism. Our results suggest that historical forms of economic production continue to shape the scope of cooperation. This is the case even among second generation migrants, who no longer face the same economic and ecological environment. Our results highlight that limited moral universalism has continued relevance for understanding development, firm growth, and a wide variety of political preferences.

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Web Appendix for

Ancestral Livelihoods and Moral Universalism: Evidence from Transhumant Pastoralist Societies

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Contents

List of Tables

List of Figures

Appendix A. Data Sources and Variable Definitions

A.1. *Variables from the Ethnographic Atlas*

Transhumant Pastoralism: is based on variables v4 $\in$ [0;100] in 10 percent intervals (animal husbandry), v40 (predominant type of animal husbandry), and v30 (settlement pattern) from the EA. From variable v4, we create one dummy variable *herding animals* that equals one if the predominant type of animal raised is a herding animal such as cattle, sheep, or camelids. From variable v30, we create one dummy variable *impermanent settlement* that equals one if a society's settlement pattern is either "nomadic or fully migratory", "seminomadic", "semisedentary", "compact but impermanent settlements", or "neighborhoods of dispersed family homes", and zero otherwise. We measure transhumant pastoralism by multiplying variable v40 by variables *herding animals* and *impermanent settlement*.

Pastoralism: is based on variables v4 (animal husbandry) $\in$ [0;100] in 10 percent intervals and v40 (predominant type of animal husbandry). From variable v4, we create one dummy variable *herding animals* that equals one if the predominant type of animal raised is a herding animal such as cattle, sheep, or camelids. We measure pastoralism by multiplying variable v40 by variables *herding animals*. This measure is similar to Becker (2019).

Transhumant: is based on variable v30 (settlement pattern). We create one dummy variable *impermanent settlement* that equals one if a society's settlement pattern is either "nomadic or fully migratory", "seminomadic", "semisedentary", "compact but impermanent settlements", or "neighborhoods of dispersed family homes", and zero otherwise.

Mean Size Communities: is based on variable v31 (average population of local communities) a categorical variable ranging from 1 less than 50 inhabitants, to 8 more than 50,000 inhabitants. In the study we employ the variable as coded in the EA.

Political Complexity: is based on variable variable v33 (jurisdictional hierarchy beyond local communities) a categorical variable ranging from zero *acephalous societies* to three *three levels*. We make use of this variable as coded in the EA.

Monogamy: is based on variable v09 (marital composition of family units). Monogamy takes the value one if a group's dominant form of marital composition is monogamous.

Patrilineal: is based on variable v43 (major mode of descent). Variable v43 was not included in the original Ethnographic Atlas and was derived from variables v17, v19, and v21, describing

patrilineal and matrilineal kin groups. Our measure takes the value one if a group's major mode of descent is patrilineal as opposed to any other mode of descent.

Patrilocal: is based on variable v11 (prevailing pattern of transfer of residence at marriage). Our measure is coded one if the wife commutes to the husband's place, and zero otherwise.

Equal Inheritance: is based on variable v77 (inheritance distribution for movable property). Our measure is coded as one if movable properties are equally distributed.

High God: is based on variable v34 (religion: high god). Our measure is coded as one if a group believes in a moralizing god and zero otherwise.

Male Circumcision: is based on variable v37 (male genital mutilations). Our measure is coded as one if a group practices male circumcision, or any of its variants, and zero if circumcision is absent in the society.

Presence of Slavery: is based on variable v70 (slavery: type). Our measure is coded as one if a group either practices hereditary or non-hereditary slavery, and zero if slavery is absent in the society.

A.2. *Geographic Variables*

Mean Temperature: is the monthly-average temperature over the years 1901-1949.

Mean Precipitation: is the monthly-average precipitation over the years 1901-1949.

std Precipitation: is the variance in monthly-average precipitation over the years 1901-1949.

Elevation: is measured in meters above the see level. Source: Global Multi-resolution Terrain Elevation Data 2010.

Slope: is measured as the mean inclined in the terrain (degrees). Source: Global Multi-resolution Terrain Elevation Data 2010.

Drought Probability: is measured as a .5*.5 degrees grid cell's probability of annual precipitation in a given year being less than 75% of its long-term mean. Data comes from (Carrão et al., 2016).

Distance to Coast: is the distance to the nearest sea coast in kilometers from the ethnic group's homeland.

Malaria Suitability: is measured using the malaria ecology raster constructed by (Kiszewski, Mellinger, Spielman, Malaney, Sachs and Sachs, 2004).

Distance Equator: is the absolute distance between the ethnic group's homeland and the Equateur.

Tsetse Fly Suitability: is measured using the Tsetse fly suitability map from (Alsan, 2015).

A.3. Country-level Variables

Log [Population in 1500 CE]: is the log population density in persons per square kilometer in the year 1500 CE as calculated by Ashraf and Galor (2013) using population data from from (McEvedy, Jones et al., 1978).

Log [income per capita in 2000 CE]: is the real GDP per capita, in constant 2000 USD, from the Penn World Table.

Ethnic fractionalization: comes from (Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg, 2003). The index [0;1] represents the probability that two persons randomly drawn from a country's population belong to different ethnic groups.

Democracy: is measured in 2000 using variable polity2 from the Polity IV dataset. Democracy equals one if polity2 [-10;10] is positive and zero otherwise.

British/French/Socialist legal origin dummies: are three dummy variables capturing a country's Company Law or Commercial Code legal origin. The original data is from (La Porta, Lopez-de Silanes, Shleifer and Vishny, 1999).

Buddhists/Christians/Hindus/Jews/Muslisms [%]: is a set of five variables representing the share of a country's population belonging to each of the five major religions. Data is from the *PEW RESEARCH CENTER*.

A.4. Other Variables

Conflict: Data on conflict comes from Uppsala Conflict Data Program (UCDP) database (version 21.1). In the analysis, we use different measures of conflict measured both at the ethnic group and country levels. These measures are the number of conflicts, the number of state-based conflict incidents, the number of non-state conflict incidents, the number of conflict incidents, and the number of fatalities. All these variables are log-transformed.

Folklore: We use data on the folklore of each ethnic group from (Michalopoulos and Xue, 2021). In the analysis, we use the motifs associated with transhumant pastoralism (*milk, cattle, tent, travel*), trust (*trust, trustee, distrust, trusted, entrust*), climate (*rainfall, drought, dry, climate, shock*), and community (*community, group, ingroup, relationship, dependent*).

Population Density: Data on population density comes from LandScan Global 2019 Rose, McKee, Sims, Bright, Reith and Urban (2020). The data has a spatial resolution of approximately 30 arc-seconds (1 kilometer). The estimates is based on geospatial science, remote sensing technology and machine learning algorithms.

A.5. European Value Survey, and World Value Survey

Trust: Survey Question: "I'd like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much or not at all?" (Read out and code one answer each) [Your family ; Your neighborhood, People you know personally, People you meet for the first time, People of another religion, People of another nationality]. 0 Do not trust at all to 3 Trust completely.

Sense of Belonging: Survey Questions: "I see myself as member of my local community" [Strongly disagree, Disagree, Agree, Strongly agree] "I see myself as member of the [country] nation" [Strongly disagree, Disagree, Agree, Strongly agree].

A.6. WVS Countries and Ethnic Groups

We based our matching procedure on Enke (2019), Giuliano and Nunn (2017).

ALGERIA: Arabe, Kabyle, Chaoui

ARMENIA: Armenian, Kurd/Esid, Russian

BELARUS: Belorussian, Polish, Russian, Ukrainian

BOLIVIA: Quechua, Aymara, Chiquitano

ETHIOPIA: Amhara, Tigre, Oromiya, Gurage, Gamo, Somali, Afar, Sidama, Wolayta

GHANA: French, Ga Afangbe, Akan, Ewe, Dagbani, Hausa, Guan, Krobo, Ningo, Ada, Kotokoli, Bono, Komkomba, Nzema, Busanga, Dagari, Bimba, Ijaw, Esako

HUNGARY: Gypsy, Hungarian

INDONESIA: Lombok/Sumbawa, Javanese, Malay, Sundanese, Chinese, Lampung, Makassar, Mandar, Manggarai, Minangkabau, Toraja

IRAN: Turk/Azeri, Kurd, Baluch, Lor

IRAQ: Kurdish, Turk

JORDAN: Jordan

KAZAKHSTAN: Armenian, Azerbaijanian, Azeri, Bashkir, Belorussian, Bulgarian, Chechen, Chinese, Dungan, Georgian, German, Kazah, Koreans, Kurd/Esid, Kyrgyz, Moldovan, Mordvin, Polish, Russian, Tajik, Tatar, Turkish, Udmurt, Ukrainian

KYRGYZSTAN: Azerbaijanian, Dungan, German, Kalmyk, Koreans, Kurd/Esid, Kyrgyz, Russian, Tatar, Turkish, Ukrainian, Ruso, Kazajo

MALAYSIA: Chinese, Brunei Malay, Malay, Kadazan, Bajau, Iban, Kelabit, Rungus

MOLDOVA: Bulgarian, Gagaus, Moldovian, Russian, Ukrainian

MOROCCO: Bereber

MYANMAR: Rakhine, Shan, Mon

NIGERIA: Yoruba, Hausa, Igbo, Fulani, Tiv, Ibibio, Krobo, Bono, Dagari, Bimba, Yala, Bassa, Gbagi, Ijaw, Esan, Edo, Esako, Urhobo, Nupe, Chamba, Bachama, Yungur, Tangale, Ogoja, Boki, Efik, Ejagam, Baribari

PAKISTAN: Punjabi, Pathan, Baluchi, Sindhi, Urdu, Seraiki

PERU: Quechua, Aymara

PHILIPPINES: Tagalog, Chabacano, Yakan, Dabawenyo, Chinese, Sama, Cebuano, Pangasinense, Kankana-ay, Ibaloy

RUSSIA: Armenian, Azerbaijanian, Azeri, Belorussian, Georgian, Kazah, Kyrgyz, Moldovian, Russian, Tadjic, Tatar, Ukrainian, German, Italian, Moldovan, Russian, Ukrainian, Iranian

SERBIA: Albanian, Hungarian, Montenegrin, Serbian

SINGAPORE: Chinese, Malay

SWEDEN: Swedish

TAIWAN: Hakka

TAJIKISTAN: Russian, Tajik

THAILAND: Thai, Malayu

TUNISIA: Arabic

UKRAINE: Armenian, Belorussian, Bulgarian, Georgian, Greek, Hungarian, Koreans, Moldovian, Polish, Russian, Tatar, Ukrainian

UZBEKISTAN: Kazah, Kyrgyz, Russian, Tadjic, Tatar, Turkmenian

VIETNAM: Vietnamese, Muong

A.7. Sampled Countries

Figure A1: Sampled Countries: WVS/EVS
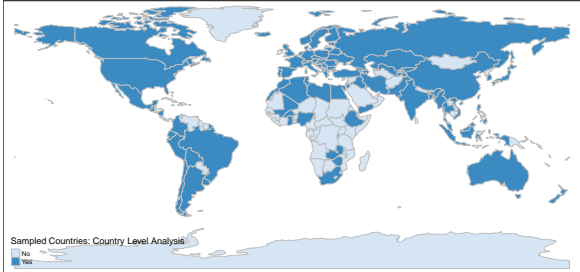
(a) Sampled Countries: Cross-Country Analysis
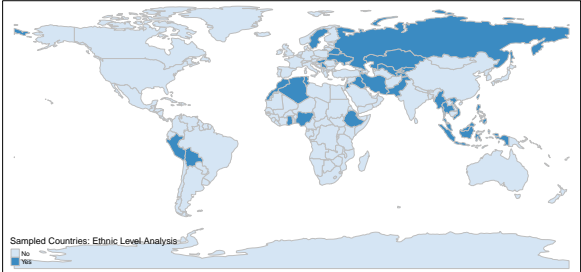
(b) Sampled Countries: Ethnic Level Analysis
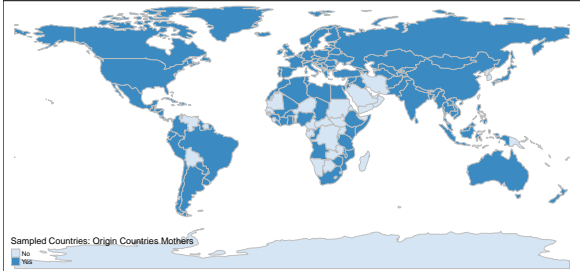
(c) Origin Countries of the Mother
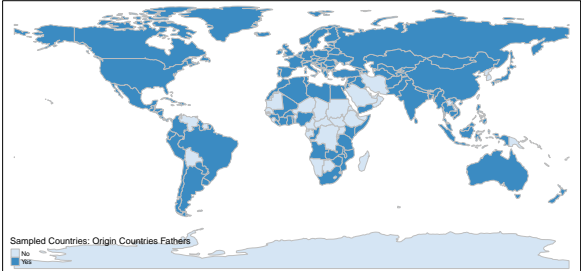
(d) Origin Countries of the Father

Notes: These maps display the sampled countries (shaded blue) of the coss-country analysis panel (a), the within country analysis based on a respondent's ethnic group panel (b), and the within country analysis based on a respondent's mother's (c) and father's (d) country of birth.

Figure A2: Sampled Countries: Afrobarometer
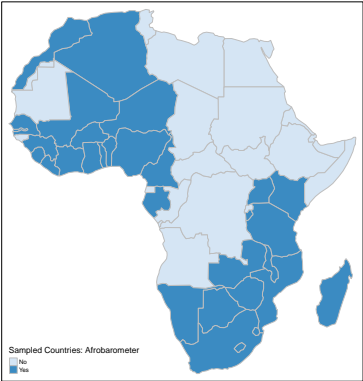
(a) Afrobarometer Sample

Figure A3: Sampled Countries: World Bank's Enterprise Survey
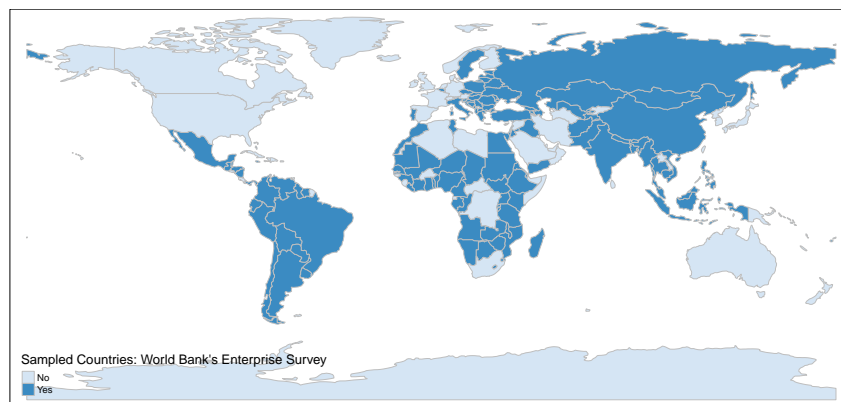
(a) World Bank's Enterprise Survey

A.8. Concept of Moral Universalism or Parochialism

Figure A4: Graphical Visualisation of Moral Universalism
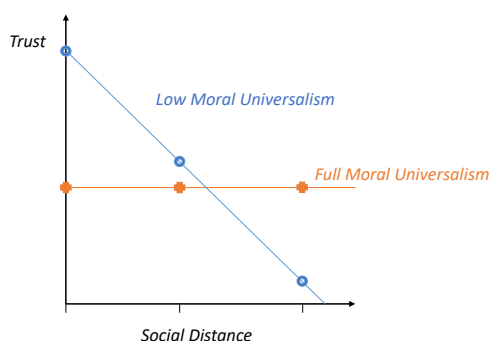
(a) Low and Full Moral Universalism
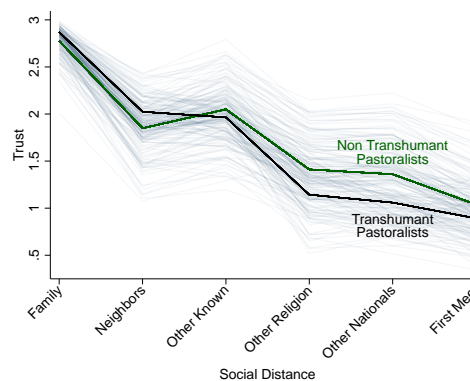
(b) Trust by Social Distance (IVS)

Notes: Panel A4a presents a graphical visualisation of the concept of Moral Universalism. The figure comes from Enke, Rodríguez-Padilla and Zimmermann (2021b) and depicts two types. Among the "full moral universalism" type, the level is trust is constant along the social distance distribution. In contrast, among the "low moral universalism" type, the level of trust decreases as social distance increases. Panel A4b plots the distribution of trust by social distance aggregated at the country level. The black curve shows the average for countries whom population historically relied on transhumant pastoralism for at least 10% of calories intake. The green curve shows the distribution for countries where transhumant pastoralism played no role in historical calories intake.

A.9. Summary Statistics

Table A1: Summary Statistics: Ethnic Group Level from Ethnographic Atlas

	count	mean	sd	min	max
Ethnographic Features					
Transhumant Pastoralism	1186	0.045	0.165	0	1
Animal Husbandry	1289	0.156	0.179	0	1
Political Complexity	1154	0.942	1.105	0	4
Nuclear Family	1290	0.295	0.456	0	1
Irrigation	1187	0.105	0.307	0	1
ln(Years since Obs.)	1282	7.547	0.097	5	8
Geographic Features					
Latitude [std.]	1290	15.355	22.695	-55	78
Ruggedness	1290	106.102	129.427	0	884
Agriculture Suitability	1184	0.361	0.284	0	1
Caloric Suitability	1285	1210.013	662.292	0	3173
Elevation	1290	651.624	662.277	-15	4677
Arid Climate	1290	0.190	0.363	0	1

Table A2: Summary Statistics: Individual Level WVS

	count	mean	sd	min	max
Baseline Controls					
Age	48157	39.783	15.647	15	103
Sex	48163	1.525	0.499	1	2
Endogenous Controls					
Education {low, middle, high}	44948	1.963	0.717	1	3
Religious person	46490	1.301	0.524	1	3
Social class (subjective)	45146	3.323	0.991	1	5
Employment status	48001	3.341	2.117	1	8
Scale of incomes	46975	4.979	2.097	1	10

Table A3: Summary Statistics: Individual Level Afrobarometer

	count	mean	sd	min	max
Respondent Controls					
Respondent Age	140404	36.794	14.597	18	130
Respondent Gender	141356	1.501	0.500	1	2
Respondent Urban Status	141257	1.635	0.504	1	3
Respondent Education	141027	3.180	2.121	0	9
Interviewer Controls					
Interviewer Age	3923	29.473	7.105	18	68
Interviewer Gender	3923	1.471	0.499	1	2
Interviewer Urban Status	3923	1.743	0.442	1	3
Interviewer Education	3923	7.048	1.235	3	9
Number of Surveys	141362	53.891	35.389	1	271

Appendix B. Additional Tables and Figures

B.1. Figures and Maps

Figure B5: Box Plot: $\Delta(Trust^{In} - Trust^{Out})$

excludes outside values
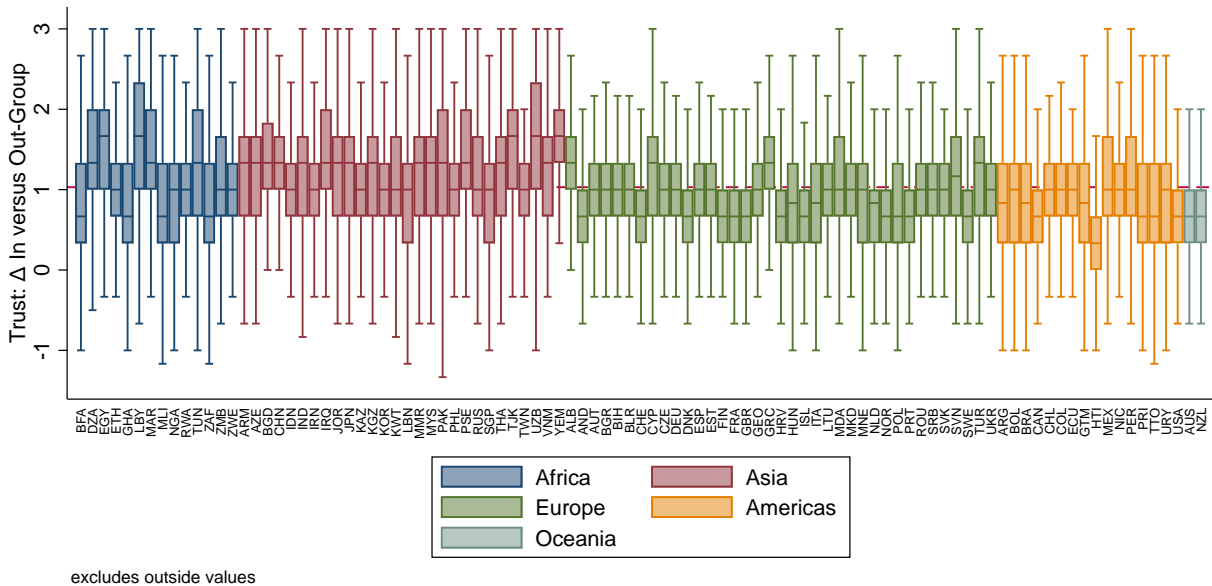
Notes: This figure plots the mean, q1, q3, min and max of $\Delta(Trust^{In} - Trust^{Out})$ across countries. Data is from the WVS/EVS.

Figure B6: Distribution of Transhumant Pastoral Groups in the Ethnographic Atlas Matched to Ethnologue Data
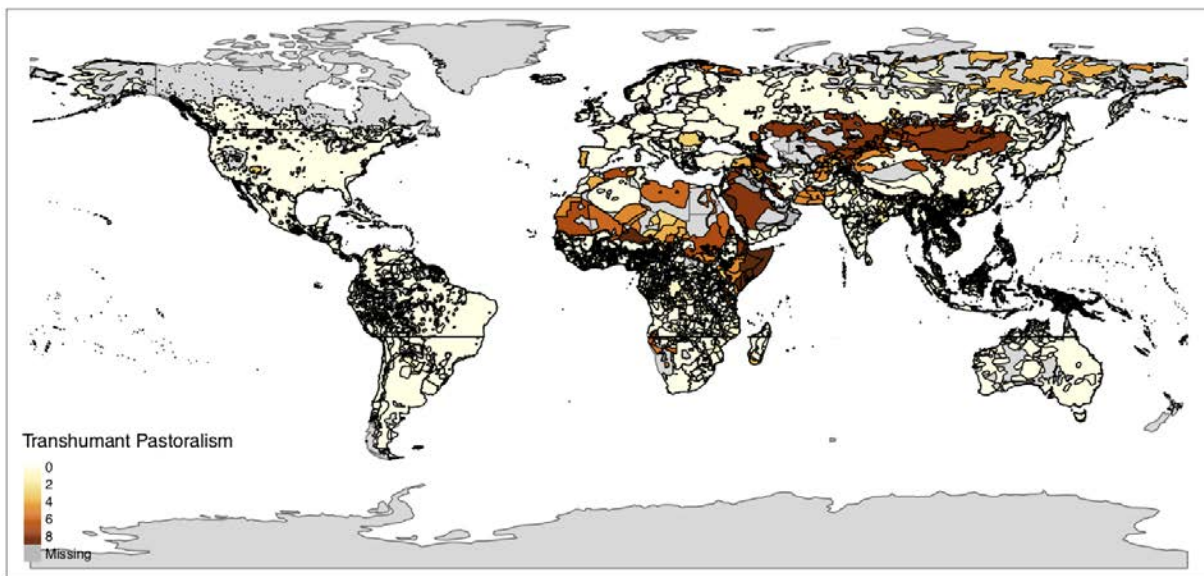
Notes: This figure displays the distribution of transhumant pastoralist groups in the Ethnographic Atlas matched to Ethnologue Data (Murdock, 1967, Gray, 1999, Giuliano and Nunn, 2017). Transhumant Pastoralism ϵ [0;1], is based on variable v4 (animal husbandry), variable v40 (predominant type of animal husbandry), and v30 (impermanent settlement).

13

Figure B7: Distribution of Transhumant Pastoralism Across Countries
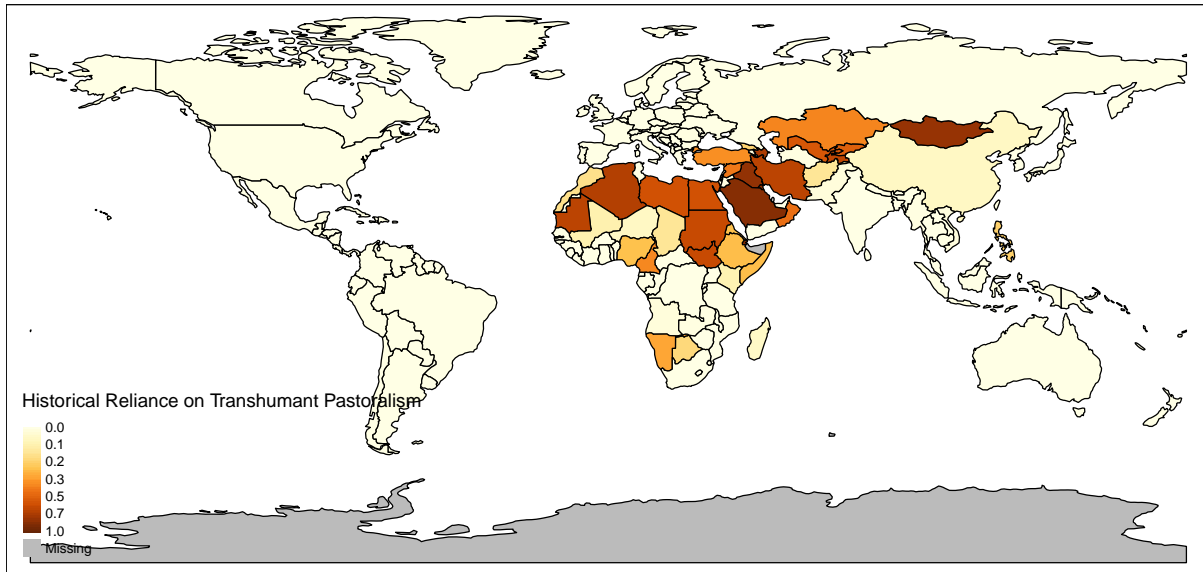
Notes: This map displays the distribution of our population-weighted index of *Transhumant Pastoralism* across countries. Authors' own computation based on Giuliano and Nunn (2017). Data comes from the Ethnographic Atlas.

Figure B8: Drought Probability Distribution Around the World
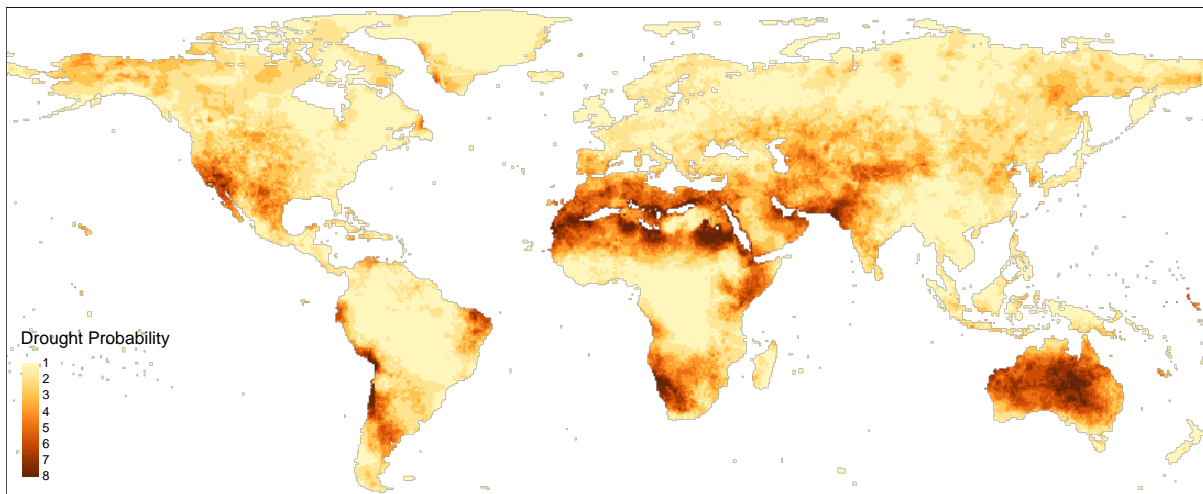
Notes: This map displays the distribution of the drought probability index around the world. The index is measured as a .5*.5 degrees grid cell's probability of annual precipitation in a given year being less than 75% of its long-term mean. Data comes from (Carrão et al., 2016).

B.2. Correlates of Parochialism

Figure B9: In-Group - Out-Group Trust and Policy Preferences and Political Participation
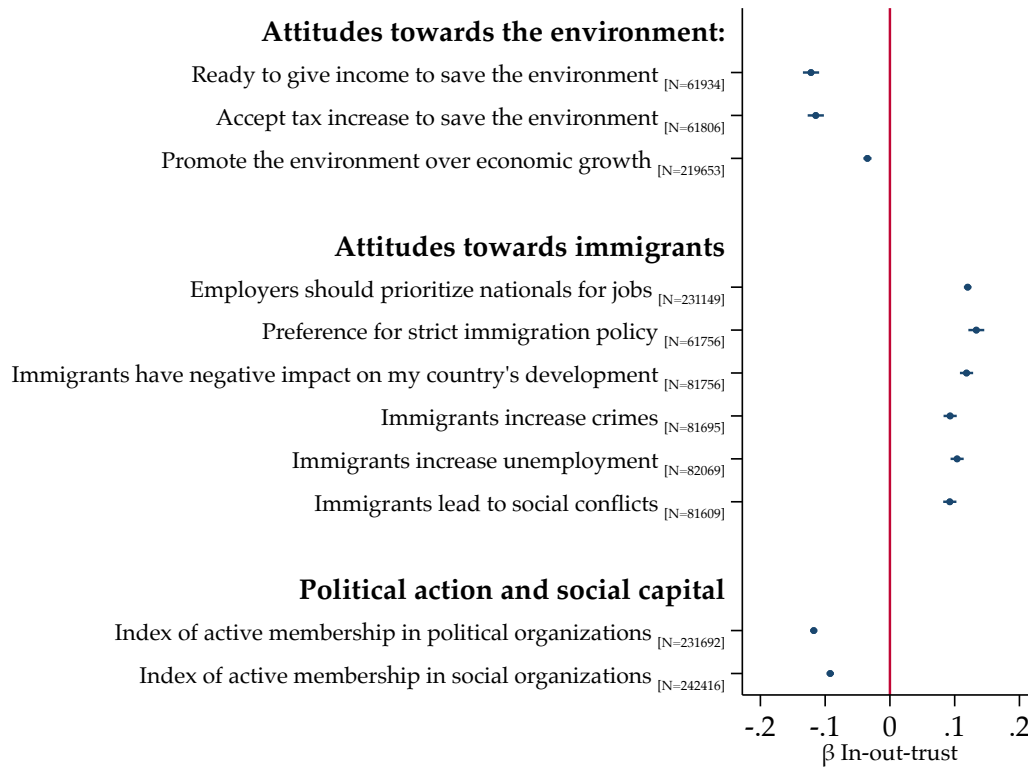
Notes: The unit of observation is an individual surveyed in the World Value Survey. Each specification controls for a respondent's age, age squared and gender as well as country-survey-wave fixed effects. Robust standard errors are presented.

B.3. Correlates of Transhumant Pastoralism

This section investigates the correlates of transhumant pastoralism.[24] We do so by regressing our measure of transhumant pastoralism on geographic and ethnographic characteristics as in Equation 1. Table B4 examines the relationship between pastoralism and some important geographic features. Table B5 presents the correlation between transhumant pastoralism and some ethnographic characteristics measured in the Ethnographic Atlas.

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[24] Transhumant pastoralism is our index of historical reliance on transhumant pastoralism as described in section 3.

Table B4: Correlates of Transhumant Pastoralism: Geographic Characteristics

	Dependent Variable:									
	Latitude	Dist. Coast	Elevation	Ruggedness	Agri. Suit.	Calo. Suit.	Arid	Malaria	Tsetse	Drought Probality
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Transhumant Pastoralism [std.]	0.133***	0.034	-0.269***	-0.223***	-0.378***	-0.402***	0.228***	0.011	0.208*	0.186***
	(0.040)	(0.069)	(0.079)	(0.058)	(0.080)	(0.069)	(0.063)	(0.039)	(0.119)	(0.069)
Observations	1154	1154	1154	1154	1062	1150	1154	1154	491	1141
ln(Years since Obs.)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.653	0.168	0.152	0.209	0.121	0.242	0.232	0.482	0.179	0.215

Notes: The unit of observation is an ethnic group in the Ethnographic Atlas. Standard errors presented in parentheses are clustered at the language sub-family level. Dependent variables and Transhumant Pastoralism are standardized. In column (9) the sample is restricted to Africa as the only region where the TseTse fly is present. Given the small number of clusters in column (9) the standard error is bootstrapped clustered and calculated over 500 iterations. In every specification, the (log) number of years since a group entered the EA and a group's historical reliance on animal husbandry are controlled for along with a set of six continent fixed effects. Detailed information on all variables definitions and sources is presented in Appendix A. Geographic characteristics are averaged within 100 kilometers around an ethnic group's homeland. Continent fixed effect is a set of 6 dummy variables (Africa, North America, South America, Europe, Asia, Oceania). *$p < 0.10$, ** $p < 0.51$, *** $p < 0.01$

16

Table B5: Correlates of Transhumant Pastoralism: Ethnographic Characteristics

| | Dependent Variable: | | | | | | | | |
| | Pol. Compl. | Monogamy | Nucl. Fam. | Patrilineal | Clans | Patrilocal | High God | Slavery | Irrigation |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Transhumant Pastoralism [std.]	-0.183***	-0.009	0.153***	0.025	-0.001	-0.046	0.027	0.030	-0.134*
	(0.062)	(0.065)	(0.057)	(0.038)	(0.078)	(0.031)	(0.060)	(0.073)	(0.074)
Observations	1121	1139	1154	1154	1006	1139	757	1053	1154
ln(Years since Obs.)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.327	0.181	0.104	0.421	0.075	0.208	0.403	0.338	0.095

Notes: The unit of observation is an ethnic group in the Ethnographic Atlas. Standard errors presented in parentheses are clustered at the language sub-family level. Dependent variables and Transhumant Pastoralism are standardized. Detailed information on all variables definitions and sources is presented in Appendix A. Continent fixed effect is a set of 6 dummy variables {Africa, North America, South America, Europe, Asia, Oceania}. *$p < 0.10$, ** $p < 0.51$, *** $p < 0.01$

17

B.4. Generalized Trust Question

In this section we investigate the relation between historical reliance on transhumant pastoralism and generalized trust: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?". We estimate variations of the following specification:

$$Trust = \alpha + \beta TranshumantPastoralism + \gamma X' + \epsilon \tag{A1}$$

Table B6 presents the coefficients estimates of $TranshulantPastoralism$. In column (1), the unit of observation is a country and historical reliance is measured at the country level using the same procedure as in section 3.1. In column (2), the unit of observation is a respondent in the WVS whom ethnic group could be match to the $E.A.$. In column (3) to (5) the unit of observation is a second generation migrant. In these specifications we assign a score of transhumant pastoralism based on the country of origin of their mother in column (3), of their father in column (4), or of both in the last column. Across specifications transhumant pastoralism does not appear correlated in any significant and consistant way with trust in a generic stranger.

Table B6: Trust in a Generic Stranger

	Dependent Variable: Trust in a Generic Stranger				
	(1)	(2)	(3)	(4)	(5)
Country: Transhumant Pastoralism [std.]	-0.173				
	(0.171)				
Ethnic: Transhumant Pastoralism [std.]		0.003			
		(0.023)			
Mother Origin Country: Transhumant Pastoralism [std.]			-0.079*		
			(0.044)		
Father Origin Country: Transhumant Pastoralism [std.]				0.036	-0.019
				(0.051)	(0.056)
Mean Dep. Var.	1.03	1.12	0.34	0.34	0.33
Num. of Clusters	97	114	142	140	128
Observations	193	64828	9271	9243	6782
Baseline Controls	Yes	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes	Yes
Ethnographic Controls	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	No	No	Yes	Yes
Country FE	No	Yes	Yes	Yes	Yes
R^2	0.558	0.073	0.128	0.126	0.116

Notes: Across all specifications, the dependent variable of interest is: trust in a generic stranger. The original variable is a dummy variable equals to one if a respondent reports that *most people can be trusted*, and zero, if the respondent answers *you never be too careful in dealing with others*. In column (1), the unit of observation is a country in the WVS and EVS, the dependent variable is collapsed by country across all respondents, and transhumant pastoralism is measured at the country level. Standard errors are clustered at the country level in parentheses. In column (2), the unit of observation is a respondent in the WVS, standard errors in parentheses are clustered at the ethnic group level, and transhumant pastoralism is measured at the ethnicity level. In columns (3) to (5), the unit of observation is a respondent in the WVS who is a second generation migrant, standard errors in parentheses are clustered at the mother or father country or origin level. Baseline controls include a country's historical reliance on animal husbandry, and log number of years since a country's ethnic groups were observed in the E.A. Geographic controls are ancestry-adjusted and include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, and ruggedness. Ethnographic controls are ancestry-adjusted and include: political complexity, domestic organization around nuclear family, and past irrigation. Columns (2) to (5) control for age, age squared, and gender. * p < 0.1; ** p < 0.05; *** p < 0.01

B.5. Robustness Tables

This section includes various robustness tables. Table B7 presents the estimates by trust question and table B8 presents the trust results by gender. Table B9 shows that our across-countries result is robust to controlling for (log) population in the year 1500, (log) income per capita in the year 2000, ethnic fractionalization, level of democracy, legal origins, population share of each of the three main monotheist religions, and population density. Table B10 controls for all livelihoods as defined in the Ethnographic Atlas but agriculture. Table B11 shows both across-countries and individual level estimates when we winsorize the *pastoralism* variable. Table B12 provides robustness to the within-country estimates holding constant a respondent's education level, religion, level of religiosity, social class, employment status, and scale of income. Table B13 controls for contemporary population density in an ethnic group's homeland. Table B14 controls for the number of contemporary conflicts within an ethnic group's homeland. Table B15 controls for the type of animal raised by an ethnic group. Table B16 uses region fixed effects instead of the country fixed effects.

Table B7: Individual Level Estimates: Transhumant Pastoralism and Trust by Trust Question

	Dependent Variable:							
	Trust^{In}				Trust^{Out}			
	In-Group	Relatives	Neighbors	Other Known	Out-Group	First Meet	Other Religion	Other Nationals
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Transhumant Pastoralism [std.]	0.025***	0.012*	0.041***	0.002	-0.053***	-0.014*	-0.057***	-0.066***
	(0.009)	(0.007)	(0.009)	(0.009)	(0.017)	(0.008)	(0.019)	(0.019)
Mean Dep. Var.	2.19	2.79	1.87	1.89	1.07	1.21	1.11	1.11
Observations	46202	46102	45972	45970	45906	45673	44553	44400
Num. of Clusters	114		114	114		114	114	114
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.091	0.078	0.079	0.065	0.113	0.073	0.115	0.112

Notes: OLS estimates with robust standard errors in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Dependent variables in columns (1) to (3) are: trust in relatives, neighbors, and other people the respondent knows. Dependent variables in columns (4) to (6) are: trust in someone the respondent meets for the first time, trust people who believes in another religion, trust foreigners. Each specification controls for the respondent's age, age squared, and gender. Survey-round fixed effects are included in every specification. * p < 0.1; ** p < 0.05; *** p < 0.01

Heterogeneity by Gender and Age Cohort

We examine gender differences in the effect of transhumant pastoralism. In figure B10, we plot coefficient β associated with transhumant pastoralism using our baseline specification estimated for the full sample, the sample of men, and the sample of women. The magnitude of the effect we observe is similar among men and women.

Figure B10: Transhumant Pastoralism and In-Group Trust Bias: Gender Differences
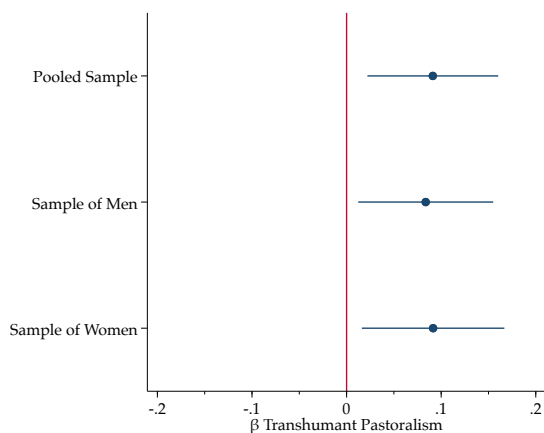
Notes: This figure plots the coefficient estimates of $Transhumant Pastoralism$ for the subsample of men ($N = 20{,}678$) and women ($N = 22{,}788$). Regression coefficients reported in table B8.

We take advantage of the multiple rounds of the WVS and the availability of data on respondents' years of birth to examine how our coefficient of interest varies for different age cohorts. Around the world, reliance on transhumant pastoralism has declined with modernization. Here we aim to assess the magnitude of the coefficient for older generations, who may be more likely to have practiced transhumant pastoralism, relative to younger generations.

We present the results in the three panels of figure B11. Panel B11a displays the estimated β coefficient of transhumant pastoralism using our baseline specification estimated separately for each decade of birth between 1940 and 1990: the intensity of the effect of transhumant pastoralism is slowly decreasing since the 1960s. In panels B11b, and B11c, we conduct the same analysis but this time stratified by gender. For the sample of men, there is some evidence of decline over time (panel B11b). In contrast, among women, transhumant pastoralism remains a stable predictor of greater in-group relative to out-group trust (panel B11c).

20

Figure B11: Transhumant Pastoralism and In-Group Trust Bias: Heterogeneity by Birth Cohort
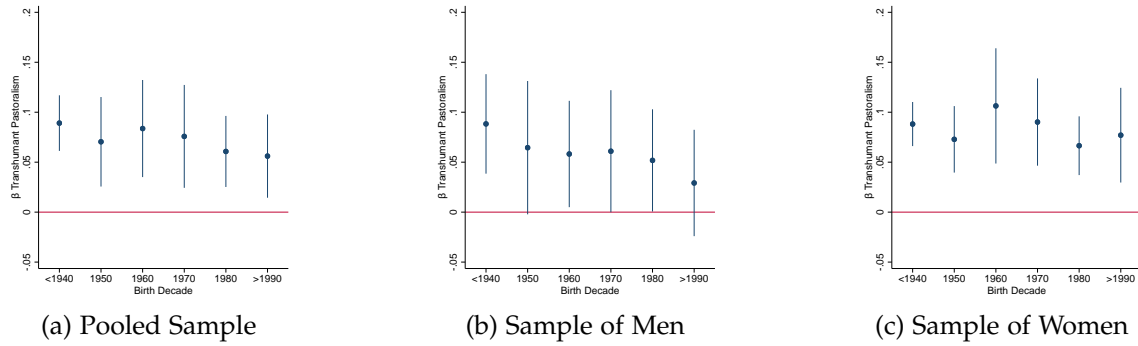
(a) Pooled Sample   (b) Sample of Men   (c) Sample of Women

Notes: The unit of analysis in these graphs is a respondent in the WVS survey. Transhumant Pastoralism is measured at the ethnic group level. Panel B11a displays the estimated β coefficient of Transhumant Pastoralism for each birth cohort separately for the sample of both men and women ($N = 43,446$). Panel B11b displays the estimated β coefficient of Transhumant Pastoralism for the sample of men ($N = 20,678$), and panel B11c displays the coefficient for the sample of women ($N = 22,788$).

Table B8: Gender Differences

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})			
	Pooled Sample	Pooled Sample	Sample of Men	Sample of Women
	(1)	(2)	(3)	(4)
Transhumant Pastoralism [std.]	0.091**	0.094**	0.084**	0.091**
	(0.035)	(0.036)	(0.036)	(0.038)
Male		-0.017		
		(0.012)		
Male $\times$ Transhumant Pastoralism [std.]		-0.007		
		(0.011)		
Mean Dep. Var.	1.12	1.12	1.12	1.12
Num. of Clusters	103	103	96	94
Observations	43466	43466	20678	22788
Individual Controls	Yes	Yes	Yes	Yes
Baseline Controls	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes
Ethnographic Controls	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes
R^2	0.100	0.100	0.106	0.098

Notes: OLS estimates with robust standard errors clustered at the ethnic group level in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on mobile pastoralism. Dependent variable in all columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Specifications reported in columns (1) and (2) control for the respondent's age, age squared, and gender. Column (3) restricts the sample to only men, and column (4) restricts the sample to only women. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in every specification. * p < 0.1; ** p < 0.05; *** p < 0.01

Table B9: Cross-Country Estimates: Transhumant Pastoralism and In-Group Relative to Out-Group Trust - Additional Control Variables

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Transhumant Pastoralism [std.]	0.286**	0.282*	0.335**	0.297**	0.251*	0.264**	0.323**
	(0.136)	(0.144)	(0.147)	(0.148)	(0.133)	(0.120)	(0.138)
Mean Dep. Var.	1.03	1.03	1.03	1.04	1.03	1.03	1.03
Num. of Clusters	91	90	89	91	91	97	96
Observations	180	179	178	185	180	194	191
Log [Population in 1500 CE]	Yes						
Log [income per capita in 2000 CE]		Yes					
Ethnic fractionalization			Yes				
Democracy				Yes			
British/French/Socialist legal origin dummies					Yes		
Christians/Jews/Muslims [%]						Yes	
Population Density							Yes
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.663	0.687	0.653	0.641	0.690	0.646	0.652

Notes: OLS estimates with standard errors clustered at the country level in parentheses. The unit of observation is a country and data is from the IVS. *Transhumant Pastoralism* is an index [0;1] measuring a country's population historical reliance on transhumant pastoralism. Dependent variable in every columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Baseline controls include a country's historical reliance on animal husbandry, and log number of years since a country's ethnic groups were observed in the E.A. Geographic controls are ancestry-adjusted and include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls are ancestry-adjusted and include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects included in every column. * p < 0.1; ** p < 0.05; *** p < 0.01

Figure B12: Country-specific β Transhumant Pastoralism
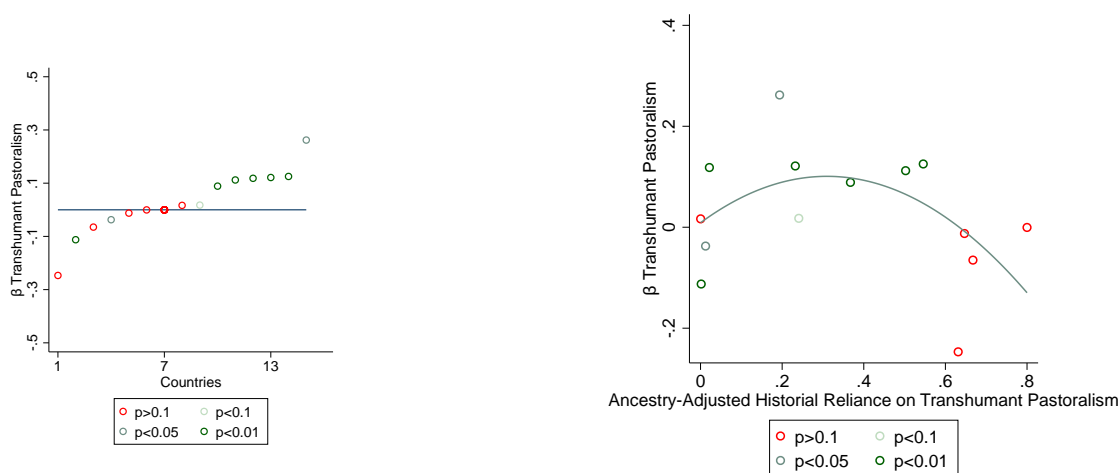
(a) Country-specific β Transhumant Pastoralism

(b) β Transhumant Pastoralism and Ancestry-Adjusted Transhumant Pastoralism

Notes: The unit of analysis in these graphs is a respondent in the WVS survey. Transhumant Pastoralism is measured at the ethnic group level. The left panel displays the estimated β coefficient of Transhumant Pastoralism for each country separately. The right panel plots the estimated Transhumant Pastoralism coefficient β against a country's historical reliance on Transhumant Pastoralism.

Table B10: Cross-Country Estimates: Other Livelihoods and In-Group Relative to Out-Group Trust

|	Dependent Variable: Δ (Trust^{In} - Trust^{Out})			
	(1)	(2)	(3)	(4)
Transhumant Pastoralism [std.]	0.750***	0.465***	0.397***	0.408***
	(0.121)	(0.134)	(0.143)	(0.140)
Gathering [std.]	-0.138*	-0.141**	-0.093	-0.051
	(0.076)	(0.057)	(0.073)	(0.080)
Hunting [std.]	-0.178*	-0.221**	-0.180*	-0.166
	(0.104)	(0.098)	(0.102)	(0.106)
Fishing [std.]	-0.461***	-0.082	-0.080	-0.114
	(0.171)	(0.145)	(0.163)	(0.166)
Animal Husbandry [std.]	-0.613***	-0.553***	-0.439**	-0.440***
	(0.169)	(0.158)	(0.178)	(0.157)
Mean Dep. Var.	1.03	1.03	1.03	1.03
Observations	194	194	194	194
Baseline Controls	Yes	Yes	Yes	Yes
Geographic Controls	No	Yes	Yes	Yes
Ethnographic Controls	No	No	Yes	Yes
Continent FE	No	No	No	Yes
R^2	0.428	0.566	0.615	0.641

Notes: OLS estimates with standard errors clustered at the country level in parentheses. The unit of observation is a country and data is from the IVS. *Transhumant Pastoralism* is an index [0;1] measuring a country's population historical reliance on transhumant pastoralism. Dependent variable in every columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Baseline controls include a country's historical reliance on animal husbandry, and log number of years since a country's ethnic groups were observed in the E.A. Geographic controls are ancestry-adjusted and include: latitude, suitability for agriculture, caloric suitability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls are ancestry-adjusted and include: political complexity, domestic organization around nuclear family, and past irrigation. * p < 0.1; ** p < 0.05; *** p < 0.01

Table B11: Cross-Country and Individual Level Estimates: Transhumant Pastoralism - Winsorized Pastoralism Measure

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})			
	(1)	(2)	(3)	(4)
Transhumant Pastoralism (winsorized) [std.]	0.377***	0.361***	0.078***	0.080***
	(0.072)	(0.124)	(0.020)	(0.022)
Mean Dep. Var.	1.03	1.03	1.12	1.12
Num. of Clusters	97	97	114	103
Observations	194	194	45902	43466
Individual Controls	No	No	Yes	Yes
Baseline Controls	No	Yes	No	Yes
Geographic Controls	No	Yes	No	Yes
Ethnographic Controls	No	Yes	No	Yes
Continent FE	No	Yes	No	No
Country FE	No	No	Yes	Yes
Survey-Wave FE	No	No	Yes	Yes
R^2	0.354	0.636	0.101	0.100

Notes: In columns (1) and (2) OLS estimates with standard errors clustered at the country level in parentheses. The unit of observation is a country and data is from the IVS. *Transhumant Pastoralism* is an index [0;1] measuring a country's population historical reliance on transhumant pastoralism. In columns (3) and (4) OLS estimates with robust standard errors clustered at the ethnic group level. The unit of observation is a respondent in the IVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Animal husbandry, which serves to construct Transhumant Pastoralism, is winsorized at 95th percentile. Dependent variable in every columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Baseline controls include a country's historical reliance on animal husbandry, and log number of years since a country's ethnic groups were observed in the E.A. Geographic controls are ancestry-adjusted and include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls are ancestry-adjusted and include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in specifications (3) and (4). * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table B12: Individual Level Estimates: Transhumant Pastoralism and In-Group Relative to Out-Group Trust - Additional Individual Level Control Variables

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})				
	(1)	(2)	(3)	(4)	(5)
Transhumant Pastoralism [std.]	0.060***	0.071**	0.066*	0.094***	0.059*
	(0.019)	(0.035)	(0.035)	(0.035)	(0.034)
Mean Dep. Var.	1.11	1.12	1.11	1.11	1.11
Num. of Clusters	114	108	106	103	103
Observations	37910	37084	36094	36014	36014
Individual Controls	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	Yes	Yes	Yes
Endogenous Controls	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	Yes	No	Yes	Yes
Ethnographic Controls	No	No	Yes	Yes	Yes
Lasso-Selected Controls	No	No	No	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes
R^2	0.112	0.108	0.109	0.111	

Notes: OLS estimates with robust standard errors in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Dependent variable in all columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Each specification controls for the respondent's age, age squared, gender, education, religion, religiosity, social class, employment status, and scale of income. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in every specification. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table B13: Individual Level Estimates: Transhumant Pastoralism and In-Group Relative to Out-Group Trust - Population Density Controls

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})				
	(1)	(2)	(3)	(4)	(5)
Transhumant Pastoralism [std.]	0.071***	0.065*	0.071*	0.081**	0.058*
	(0.020)	(0.038)	(0.040)	(0.036)	(0.033)
Population Density [std.]	-0.011	0.026	0.002	0.041	0.018
	(0.023)	(0.020)	(0.027)	(0.030)	(0.026)
Mean Dep. Var.	1.12	1.12	1.12	1.12	1.12
Num. of Clusters	114	108	106	103	103
Observations	45902	44891	43573	43466	43466
Individual Controls	Yes	Yes	Yes	Yes	Yes
Population Density	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	Yes	Yes	Yes
Geographic Controls	No	Yes	No	Yes	Yes
Ethnographic Controls	No	No	Yes	Yes	Yes
Lasso-Selected Controls	No	No	No	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes
R^2	0.101	0.098	0.098	0.100	

Notes: OLS estimates with robust standard errors in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Dependent variable in all columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Each specification controls for the respondent's age, age squared, and gender. Each specification also controls for population density in an ethnic group's homeland. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in every specification. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table B14: Individual Level Estimates: Transhumant Pastoralism and In-Group Relative to Out-Group Trust - Controls for Conflict

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})					
	(1)	(2)	(3)	(4)	(5)	(6)
Transhumant Pastoralism [std]	0.091***	0.091**	0.118***	0.094**	0.089**	0.147***
	(0.034)	(0.035)	(0.032)	(0.037)	(0.035)	(0.034)
ln (1 + Conflict Incidence)	0.003					-0.083*
	(0.008)					(0.044)
ln (1 + State-based Conflict Incidence)		0.002				-0.002
		(0.010)				(0.019)
ln (1 + Non-state Conflict Incidence)			-0.029*			-0.059***
			(0.015)			(0.016)
ln (1 + Localized Conflict Incidence)				0.006		0.031**
				(0.010)		(0.016)
ln (1 + Fatalities)					0.006	0.066***
					(0.006)	(0.021)
Mean Dep. Var.	1.12	1.12	1.12	1.12	1.12	1.12
Num. of Custers	103	103	103	103	103	103
Observations	43466	43466	43466	43466	43466	43466
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Ethnographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.100	0.100	0.100	0.100	0.100	0.101

Notes: OLS estimates with robust standard errors clustered at the ethnic group level in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Dependent variable in all columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Each specification controls for the respondent's age, age squared, and gender. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in every specification. Data on conflict comes from Uppsala Conflict Data Program (UCDP) database. * p < 0.1; ** p < 0.05; *** p < 0.01

Table B15: Individual Level Estimates: Transhumant Pastoralism and In-Group Relative to Out-Group Trust - Fixed Effect for Type of Animal Raised

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})				
	(1)	(2)	(3)	(4)	(5)
Transhumant Pastoralism [std.]	0.065**	0.066	0.116***	0.121***	0.065**
	(0.027)	(0.040)	(0.031)	(0.042)	(0.029)
Mean Dep. Var.	1.12	1.12	1.12	1.12	1.12
Num. of Clusters	114	108	106	103	103
Observations	45902	44891	43573	43466	43466
Individual Controls	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	Yes	Yes	Yes
Geographic Controls	No	Yes	No	Yes	Yes
Ethnographic Controls	No	No	Yes	Yes	Yes
Lasso-Selected Controls	No	No	No	No	Yes
Animal FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes
R^2	0.102	0.098	0.100	0.101	

Notes: OLS estimates with robust standard errors clustered at the ethnic group level in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Dependent variable in all columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Each specification controls for the respondent's age, age squared, and gender. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round and type of animal raised (sheep, camels, bovine, horses) fixed effects are included in every specification. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table B16: Individual Level Estimates: Transhumant Pastoralism and In-Group Relative to Out-Group Trust - Region Fixed Effects

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})				
	(1)	(2)	(3)	(4)	(5)
Transhumant Pastoralism [std.]	0.074***	0.069***	0.088***	0.100***	0.090***
	(0.010)	(0.025)	(0.028)	(0.024)	(0.026)
Mean Dep. Var.	1.12	1.13	1.12	1.12	1.12
Num. of Clusters	112	106	104	101	101
Observations	39817	38807	37488	37382	37398
Individual Controls	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	Yes	Yes	Yes
Geographic Controls	No	Yes	No	Yes	Yes
Ethnographic Controls	No	No	Yes	Yes	Yes
Lasso-Selected Controls	No	No	No	No	Yes
Region (ISO 3166-2) FE	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes
R^2	0.175	0.171	0.169	0.170	

Notes: OLS estimates with robust standard errors clustered at the ethnic group level in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Dependent variable in all columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Each specification controls for the respondent's age, age squared, and gender. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in every specification. * p < 0.1; ** p < 0.05; *** p < 0.01

B.6. Additional Results

In this section we present additional results. Table B17 investigates vertical transmission by documenting that parent's country of origins is a strong predictor of one's in-out-trust among second generation migrants. Table B18 uses ethnographic data to show that transhumant pastoralism is associated with greater loyalty towards local community members and greater acceptability of violence towards out-group than towards in-group. Table B19 investigates an alternative outcome to *Delta In versus Out-Group Trust*: the difference between one's sense of belonging towards local community versus national community from the WVS. Here we find that respondents from transhumant pastoralist groups are more inclined to report greater sense of belonging towards their local community than their national state. Finally, we investigate how confident are transhumant pastoralists towards different state institutions including armed forces, the police, the courts, the parliament and the government. We find that individuals whom ancestors relied on transhumant pastoralism are systematically less confident in these institutions than otherwise similar individuals originating from groups that historically relied on other livelihoods. Finally, table B21 investigates motifs related to transhumant pastoralism in ethnic groups' folklore.

Table B17: Second Generation Migrants: Transhumant Pastoralism and In-Group Relative to Out-Group Trust

	Dependent Variable: Δ (Trust^{In} - Trust^{Out})					
	Mother's Country		Father's Country		Same Country	
	(1)	(2)	(3)	(4)	(5)	(6)
Transhumant Pastoralism [std.]	0.063*	0.063*	0.066*	0.057*	0.060	0.058*
	(0.027)	(0.025)	(0.027)	(0.025)	(0.031)	(0.026)
Mean Dep. Var.	0.82	0.82	0.82	0.82	0.83	0.83
Observations	11024	11026	11070	11074	7873	7878
Num. of Clusters	158	158	158	158	146	146
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Ethnographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Lasso-Selected Controls	No	Yes	No	Yes	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.116		0.124		0.124	

Notes: OLS estimates with robust standard errors clustered at the country level in parentheses. The unit of observation is a respondent in the IVS who is a second generation migrant. *Transhumant Pastoralism* is an index [0;1] measuring a country's population historical reliance on transhumant pastoralism. Dependent variable in all columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Each specification controls for the respondent's age, age squared, and gender. Control variables are measured at the mother or father country of origin level. Baseline controls include a country's historical reliance on animal husbandry, and log number of years since a country's ethnic groups were observed in the E.A. Geographic controls are ancestry-adjusted and include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, and ruggedness. Ethnographic controls are ancestry-adjusted and include: political complexity, domestic organization around nuclear family, and past irrigation. * p < 0.1; ** p < 0.05; *** p < 0.01

Table B19: Individual Level Estimates: Transhumant Pastoralism and Belonging

	Dependent Variable: Δ (Belonging^{Local} - Belonging^{Country})				
	(1)	(2)	(3)	(4)	(5)
Transhumant Pastoralism [std.]	0.026***	0.050**	0.066**	0.042*	0.047**
	(0.008)	(0.024)	(0.027)	(0.024)	(0.022)
Mean Dep. Var.	-0.24	-0.24	-0.24	-0.24	-0.24
Num. of Clusters	114	111	108	106	103
Observations	43983	43077	42973	41594	41490
Individual Controls	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	Yes	Yes	Yes
Geographic Controls	No	Yes	No	Yes	Yes
Ethnographic Controls	No	No	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes
R^2	0.214	0.215	0.219	0.225	0.229

Notes: OLS estimates with robust standard errors clustered at the ethnic group level in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Dependent variable in all columns is the difference between membership in local community and [country] nation. Each specification controls for the respondent's age, age squared, and gender. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnaographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in every specification. * p < 0.1; ** p < 0.05; *** p < 0.01

Table B20: Individual Level Estimates: Transhumant Pastoralism and the State

	Dependent Variable: Confidence in:				
	Armed Forces	The Police	Courts	Parliament	Government
	(1)	(2)	(3)	(4)	(5)
Transhumant Pastoralism [std.]	-0.080***	-0.064***	-0.066***	-0.019	-0.004
	(0.024)	(0.021)	(0.018)	(0.021)	(0.019)
Mean Dep. Var.	1.89	1.47	1.54	1.39	1.56
Num. of Clusters	111	111	107	111	111
Observations	61988	61368	54047	59647	61235
Individual Controls	Yes	Yes	Yes	Yes	Yes
Baseline Controls	Yes	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes	Yes
Ethnographic Controls	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Survey-Wave FE	Yes	Yes	Yes	Yes	Yes
R^2	0.187	0.168	0.156	0.210	0.200

Notes: OLS estimates with robust standard errors clustered at the ethnic group level in parentheses. The unit of observation is a respondent in the WVS. *Transhumant Pastoralism* is an index [0;1] measuring an ethnic group historical reliance on transhumant pastoralism. Dependent variables are confidence on a 0 to 3 in Armed Forces in column (1), the Police in column (2), the Justice System or Courts in column (3), the Parliament in column (4), and the Government in column (5). Each specification controls for the respondent's age, age squared, and gender. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnaographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in every specification. * p < 0.1; ** p < 0.05; *** p < 0.01

Table B21: Folklore Data: Transhumant Pastoralism-Related Motifs

	Milk (1)	Cattle (2)	Tent (3)	Travel (4)
	Dependent Variable: **Number of Folklore Motifs related to:**			
	Panel A: Baseline Controls			
Transhumant Pastoralism [std.]	0.058** (0.026)	0.023 (0.027)	0.039** (0.017)	0.041* (0.024)
	Panel B: Baseline & Ethnographic Controls			
Transhumant Pastoralism [std.]	0.076*** (0.025)	0.043* (0.025)	0.041** (0.017)	0.047** (0.021)
	Panel C: Baseline & Geographic Controls			
Transhumant Pastoralism [std.]	0.042* (0.025)	-0.026 (0.024)	0.028* (0.015)	0.021 (0.025)
	Panel D: Baseline & Full Controls			
Transhumant Pastoralism [std.]	0.053** (0.022)	-0.015 (0.022)	0.029* (0.015)	0.020 (0.020)
Mean Dep. Var.	.988	1.991	.327	1.845
Clusters	124	124	124	124
Observations	956	956	956	956
Continent FE	Yes	Yes	Yes	Yes

Notes: The unit of observation is a society in the Ethnographic Atlas. OLS estimates with robust standard errors clustered at the language sub-family level. Dependant variables are the log-transformed number of motifs related to *milk*, *cattle*, *tent*, and *travel* from (Michalopoulos and Xue, 2021)'s folklore dataset. *Transhumant Pastoralism* is an index [0;1] measuring a respondent's ethnic group historical reliance on transhumant pastoralism. Baseline controls include an ethnic group's historical reliance on animal husbandry, the log number of years since a given ethnic group was observed in the E.A. and the log number of the total number of motifs in a society. Geographic controls include: latitude, suitability for agriculture, caloric suitability, share of land in arid climate, drought probability, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B18: Standard Cross-Cultural Sample

| | Dependent Variable: | | | |
| | Loyalty Community | | Δ Violence^{Out-In} | |
	(1)	(2)	(3)	(4)
Transhumant Pastoralism [std.]	0.081	0.143	0.105	0.179*
	(0.096)	(0.108)	(0.077)	(0.089)
Mean Dep. Var.	0.90	0.90	1.98	1.98
Num. of Clusters	42	42	36	36
Observations	80	80	61	61
Continent FE	No	Yes	No	Yes
R^2	0.059	0.216	0.071	0.303

Notes: The unit of observation is a society in the Standard Cross-Cultural Sample. OLS estimates with robust standard errors clustered at the language sub-family level. Dependent variables are *Loyalty Community* defined as the difference between loyalty to local community on a 1-4 scale and loyalty to the wider society, and Δ *Violence*$^{Out-In}$ defined as the difference between the acceptability of violence toward people in other societies and members of the local community. Every specification controls for the log number of years since an ethnic group was recorded in the SCCS. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

B.7. Instrumental Variable Results

The IV strategy is similar to Becker (2019), who instruments for an ethnic group's historical reliance on pastoralism in the EA using data from Beck and Sieber (2010). Beck and Sieber (2010) provide suitability measures for: agriculture, animal husbandry, mobile pastoralism, and hunting and gathering. In Becker (2019), the instrument for pastoralism is the maximum value of the suitability for animal husbandry or transhumant pastoralism relative to suitability for agriculture. Given that we are interested in the effects of transhumant pastoralism, our proposed instrument is suitability for transhumant pastoralism relative to agriculture.

The left panel of figure B13 displays the distribution of the our index of suitability transhumant pastoralism relative to agriculture. Only the Old World is displayed in this map as the data from (Beck and Sieber, 2010) is not available for North and South America. The right panel in figure B13 presents the bin scatter plot between the extent to which an ethnic group in the EA historically relied on transhumant pastoralism and an ethnic group's homeland's suitability for transhumant pastoralism relative to agriculture. Reassuringly groups who originate from locations that are much more suitable for agriculture relative to transhumant pastoralism score around zero in our index of historical reliance on transhumant pastoralism. Conversely, groups from areas where conditions favor transhumant pastoralism relative to agriculture score higher in our index of transhumant pastoralism.

Figure B13: Land Suitability for Transhumant Pastoralism
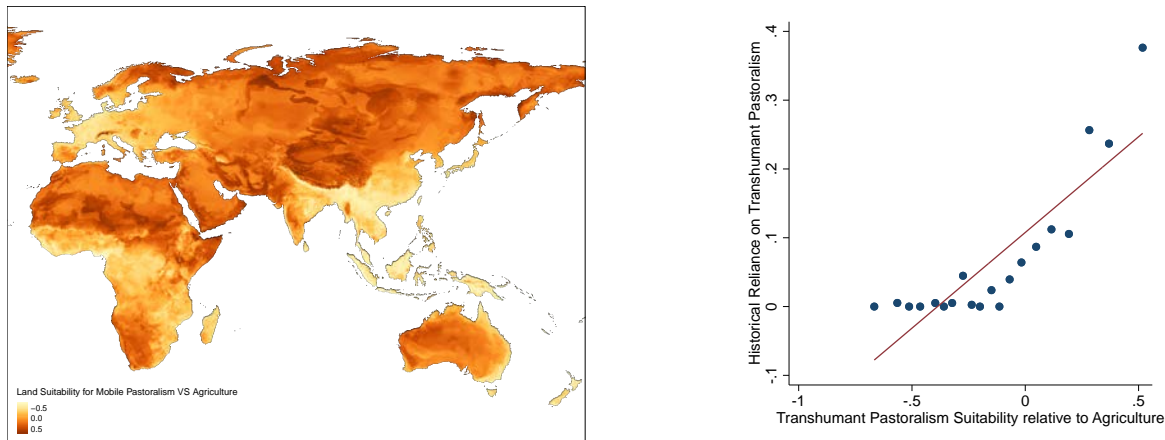
Notes: The left panel displays the suitability index of transhumant pastoralism relative to agriculture. The original data is from (Beck and Sieber, 2010). More suitable areas are depicted with a darker color. The right panel displays the bin scatter plot between the extent to which an ethnic group in the E.A. historically relied on transhumant pastoralism and an ethnic group's homeland suitability for transhumant pastoralism relative to agriculture.
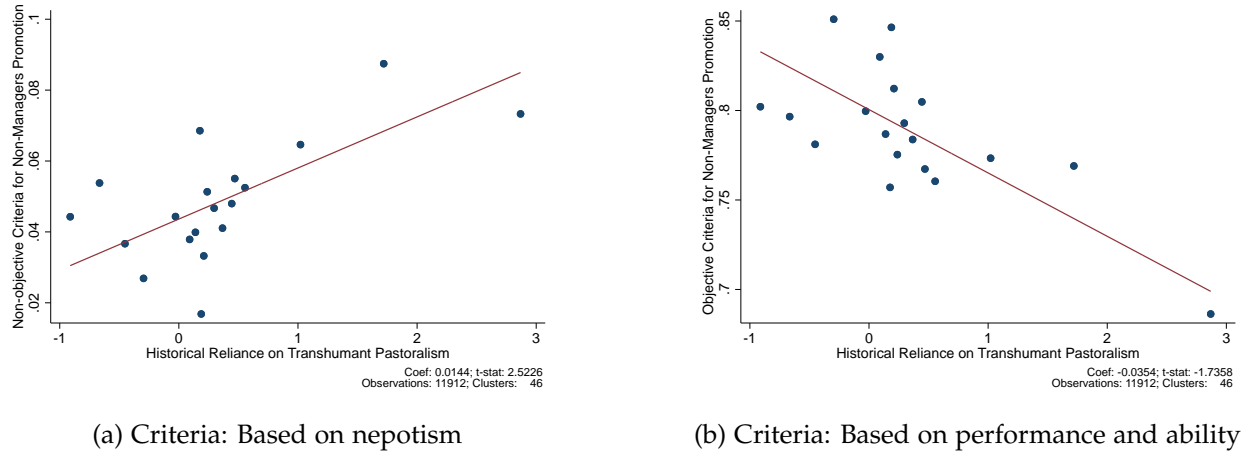
Table B22: Transhumant Pastoralism and Trust: Instrumental Variable Estimates

	Cross-Country Estimates				Within-Country Estimates			
Dependent Variable: Δ (Trust^{In} - Trust^{Out})	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)	IV (6)	OLS (7)	IV (8)
Transhumant Pastoralism [std.]	0.282***	0.387*	0.448***	1.070	0.072***	0.092*	0.078*	0.115
	(0.077)	(0.200)	(0.159)	(1.243)	(0.020)	(0.049)	(0.040)	(0.146)
Mean Dep. Var.	1.06	1.06	1.06	1.06	1.12	1.12	1.12	1.12
Num. of Clusters	81	81	81	81	111	111	101	101
Observations	160	160	160	160	44589	44589	42540	42540
Individual Controls	No	No	No	No	Yes	Yes	Yes	Yes
Baseline Controls	No	No	Yes	Yes	No	No	Yes	Yes
Geographic Controls	No	No	Yes	Yes	No	No	Yes	Yes
Ethnographic Controls	No	No	Yes	Yes	No	No	Yes	Yes
Continent FE	No	No	Yes	Yes	No	No	No	No
Country FE	No	No	No	No	Yes	Yes	Yes	Yes
Survey-Wave FE	No	No	No	No	Yes	Yes	Yes	Yes
First Stage F-Stat		7.35		.84		5.53		2.6
R^2	0.351	0.341	0.608	0.544	0.102	0.102	0.101	0.101

Notes: OLS and IV estimates with robust standard errors in parentheses clustered at the country level incolumns (1) to (4) and at the ethnic group level in columns (5) to (8). In columns (1) to (4), the unit of observation is a country from the old world and data is from the WVS and EVS. In columns (5) to (8) the unit of observation is a respondent in the WVS. In columns (1) to (4), *Transhumant Pastoralism* is an index [0;1] measuring a country's historical reliance on transhumant pastoralism. In columns (5) to (8) *Transhumant Pastoralism* is measured at the ethnic group level. In even columns *Transhumant Pastoralism* is instrumented by the ethnic group homeland's suitability for pastoralism. Dependent variable in all columns is the difference between average in-group trust (family, neighbors, people known) and average trust in out-group (people first met, people of another religion, foreigners). Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in every specification. Specifications presented in columns (4) to (8) control for the respondent's age, age squared, and gender. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

B.8. Additional Firm Results

Figure B14: Transhumant Pastoralism and Criteria for Non-Managers Promotion

(a) Criteria: Based on nepotism

(b) Criteria: Based on performance and ability

Notes: Binscatter plot of the relationship between a country's historical reliance on transhumant pastoralism and adoption of (non-)objective criteria in the decisions to promote non-managers. In panel B14a the outcome variable is a dummy variable equal to one if the decision to promote non-managers is based mainly on factors other than performance and ability (for example, tenure or family connections) and zero otherwise. In panel B14b the outcome variable is a dummy variable equal to one if the decision to promote non-managers is based solely on performance and ability and zero otherwise. The unit of observation is a firm, and data is from the World Bank's Enterprise Survey. Each dot represents the mean outcome variable for a range of our index of historical reliance on transhumant pastoralism. In the graphs we control for the ancestry-adjusted log number of years since a country's ethnic groups were observed in the E.A., a set of 51 industry fixed effects, survey-round fixed effects and continent fixed effects.

Figure B15: Transhumant Pastoralism and Firm Size: Decile Analysis
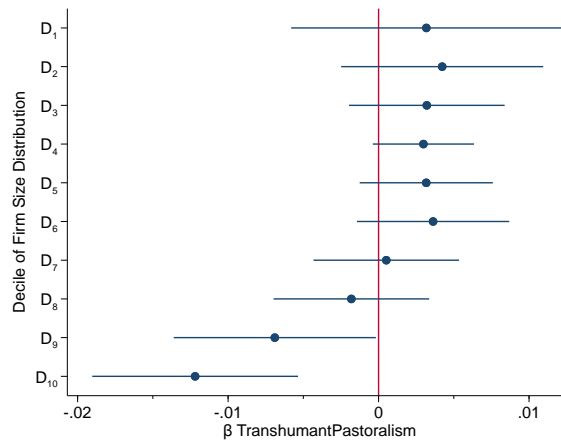
Notes: This figure displays the coefficient associated with Transhumant Pastoralism on firms size estimated by decile of the firms size distribution. Each specification controls for the ancestry-adjusted log number of years since a country's ethnic groups were observed in the E.A., a set of 51 industry fixed effects, survey-round fixed effects and continent fixed effects.

Table B23: Transhumant Pastoralism, Criteria for Non-Managers Promotion and Firm Size

	Dependent Variable:			
	Objective Criteria for Non-Managers Promotion		Total Number of Full Time Employees	
	(1)	(2)	(3)	(4)
Transhumant Pastoralism [std.]	-0.050**	-0.051**	-0.060**	-0.055**
	(0.023)	(0.024)	(0.023)	(0.023)
Mean Dep. Var.	0.74	0.74	3.44	3.44
Num. of Clusters	46	43	124	119
Observations	11912	11346	80896	78844
Continent FE	No	Yes	No	Yes
R^2	0.025	0.023	0.099	0.102

Notes: The unit of observation is a firm, and data is from the World Bank's Enterprise Survey. OLS estimates with robust standard errors clustered at the country level. *Objective Criteria for Non-Managers Promotion* is a -1 to 1 variable. It takes the value -1 if in a firm's practice for non-managers promotion is *based mainly on factors other than performance and ability (for example, tenure or family connections)*, 0 if *based partly on performance and ability, and partly on other factors (for example, tenure or family connections)*, and 1 if based *solely on performance and ability*. *Total Number of Full Time Employees* is the log transformed number of full time employees in a firm adjusted for temporary workers and is computed by the Enterprise Survey. Each specification controls for the ancestry-adjusted log number of years since a country's ethnic groups were observed in the E.A., a set of 51 industry fixed effects, survey-round fixed effects and continent fixed effects. Even columns control for a country's log-gdp per capita in the year 2000.
* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table B24: Decomposing the Effect of Transhumant Pastoralism Bundle: Promotion Decision and Firm Size

	Dependent Variable:			
	Objective Criteria for Non-Managers Promotion		Total Number of Full Time Employees	
	(1)	(2)	(3)	(4)
Pastoralism [std.]		0.065		-0.045
		(0.064)		(0.044)
Transhumant [std.]		0.072		0.034
		(0.043)		(0.034)
Transhumant Pastoralism [std.]	-0.050**	-0.162***	-0.060**	-0.061
	(0.023)	(0.059)	(0.023)	(0.053)
Mean Dep. Var.	0.74	0.74	3.44	3.44
Num. of Clusters	46	46	124	124
Observations	11912	11912	80896	80896
Continent FE	No	Yes	No	Yes
R^2	0.025	0.028	0.099	0.100

Notes: The unit of observation is a firm, and data is from the World Bank's Enterprise Survey. OLS estimates with robust standard errors clustered at the country level. *Objective Criteria for Non-Managers Promotion* is a -1 to 1 variable. It takes the value -1 if in a firm's practice for non-managers promotion is *based mainly on factors other than performance and ability (for example, tenure or family connections)*, 0 if *based partly on performance and ability, and partly on other factors (for example, tenure or family connections)*, and 1 if based *solely on performance and ability*. *Total Number of Full Time Employees* is the log transformed number of full time employees in a firm adjusted for temporary workers and is computed by the Enterprise Survey. Each specification controls for the ancestry-adjusted log number of years since a country's ethnic groups were observed in the E.A., a set of 51 industry fixed effects, survey-round fixed effects and continent fixed effects. Even columns control for a country's log-gdp per capita in the year 2000.
* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

B.9. Additional Afrobarometer Results

Table B25: Decomposing the Effect of Transhumant Pastoralism Bundle: Afrobarometer Exit Questions

	Dependent Variable: The Respondent Is:							
	Friendly		Cooperative		Honest		At Ease	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pastoralism [std.]	-0.194***	0.004	-0.209***	0.023	-0.005	0.136**	-0.077	0.043
	(0.040)	(0.035)	(0.041)	(0.060)	(0.065)	(0.042)	(0.044)	(0.069)
Transhumant [std.]	0.064***	0.022*	0.019	0.001	0.034	0.004	0.027	0.018
	(0.019)	(0.009)	(0.018)	(0.011)	(0.021)	(0.013)	(0.021)	(0.012)
Transhumant Pastoralism [std.]	-0.066***	-0.042***	-0.024	-0.020	-0.039*	-0.024*	-0.027	-0.043**
	(0.017)	(0.009)	(0.016)	(0.011)	(0.018)	(0.011)	(0.017)	(0.013)
Mean Dep. Var.	0.89	0.89	0.86	0.86	0.81	0.81	0.76	0.76
Observations	139362	139271	139416	139325	139640	139549	139669	139577
Num. of Clusters	230	230	230	230	230	230	230	230
Num. of Interviewers	3855	3764	3855	3764	3854	3763	3855	3763
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	No	Yes	No	Yes	No	Yes	No
Survey-Wave FE	Yes	No	Yes	No	Yes	No	Yes	No
Interviewer FE	No	Yes	No	Yes	No	Yes	No	Yes

Notes: OLS estimates with robust standard errors clustered at the respondent's ethnic group level in parentheses. The unit of observation is a survey in the Afrobarometer surveys. *Transhumant Pastoralism* is an index [0;1] measuring a respondent's ethnic group historical reliance on transhumant pastoralism. Across specifications the dependent variables are exit questions from the Afrobarometer surveys and measure to what extent a respondent appeared *friendly*, *cooperative*, *honest*, or *at ease* an enumerator. The dependent variables are -1 to 1 categorical variables. For the outcome considered in columns (1) and (2), -1 stands for hostile, 0 for in between, and 1 for friendly. Each specification controls for the respondent's age, age squared, gender, urban status, and education. Specifications in columns (1), (3), (5), and (7) control for the symmetric characteristics of the interviewer. Baseline controls include an ethnic group's historical reliance on animal husbandry, and the log number of years since a given ethnic groups was observed in the E.A. Geographic controls include: latitude, suitability for agriculture, caloric suitability, drought probability, share of land in arid climate, elevation, ruggedness and tsetse fly suitability. Ethnographic controls include: political complexity, domestic organization around nuclear family, and past irrigation. Survey-round fixed effects are included in all specifications except column (2). * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$