Herding, Armed Conflict, and a Culture of Honor: Global Evidence*

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Abstract: We examine the importance of norms of revenge and punishment in perpetuating armed conflicts. Our analysis leverages the 'culture of honor' hypothesis from social psychology, which posits that traditional herding practices generate moral systems conducive to revenge-taking. We find that the descendants of herders (i) experience more frequent civil and non-civil conflicts; (ii) are more likely to be involved in conflicts motivated by retaliation; and (iii) exhibit a greater emphasis on revenge-taking in contemporary surveys and historical folklore. Our evidence suggests that a traditional form of subsistence generated a functional morality that continues to shape conflict across the globe today.

Keywords: Culture of honor, morality, conflict, punishment, revenge, grievance.

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1. Introduction

It is difficult to think of anything more inimical to economic growth than warfare. Within economics, the determinants of conflict and warfare have been extensively studied and a number of important determinants have been identified. These have predominantly been economic, institutional, political, and geographic in nature.[1] Contrasting these factors, first-hand and ethnographic accounts of the determinants of conflict commonly identify revenge and vengeance as key factors. 'Grievance,' in addition to 'greed,' is hypothesized to play a key role in explaining the incidence of civil conflicts (e.g., Boehm, 1987; Scheff, 1994; Collier and Hoeffler, 2004). Retribution and revenge are cited as important factors in explaining whether rebel groups can recruit soldiers and gain the local population's support (Marchais, Mugaruka, Sanchez de la Sierra and Wu, 2022). Similarly, acts of revenge and vengeance can escalate, resulting in sustained large-scale conflicts (Davie, 1929; Chagnon, 1988).

Despite the prominence of the idea that norms of revenge and punishment contribute to conflict, there is no direct empirical evidence that pertains to larger-scale violence like civil wars. Instead, the extant evidence for the importance of punishment and revenge has focused on smaller-scale elements of aggression, such as assaults and homicides. The primary difficulty in assessing the importance of norms of revenge for conflict is the fact that while vengeance may fuel conflict, conflict most likely induces vengeance, making identifying a causal effect difficult.

To circumvent this problem, we focus on a deeper economic determinant of the desire for vengeance and punishment that is pre-determined relative to contemporary conflict and has been emphasized by psychologists, known as the 'culture of honor.' The main idea, developed by Nisbett (1993) and Nisbett and Cohen (1996), is that economic subsistence in the form of herding (pastoralism) generated a bundle of values, beliefs, and preferences that induce people to respond to threats and wrongdoings with revenge and violence.[2] This moral code is hypothesized to be especially pronounced among herders who are particularly vulnerable to exploitation and theft since their livestock is a mobile asset. In such environments, developing a reputation for being violent and willing to take revenge on those who wrong you can be beneficial. As Nisbett and Cohen (1996, p. 5) put it: "a stance of aggressiveness and willingness to kill... is

[1] For a review of different determinants of conflict, see Blattman and Miguel (2010), Burke, Hsiang and Miguel (2015) and Fearon and Laitin (2003).

[2] Components of the hypothesis were developed prior in several studies such as Peristiany (1965), Gastil (1971), Black-Michaud (1975), Ayers (1984), Wyatt-Brown (1982), and Fischer (1989).

useful in announcing a herder's determination to defend his animals."[3] This paper studies the relationships between a tradition of pastoralism, cultural and psychological proclivities to seek revenge and punish unfair behavior, and the contemporary presence of civil and non-civil conflict.

Our empirical strategy consists of five steps. First, following prior literature, we construct a quantitative measure of the degree to which historical ethnic groups relied on herding practices for economic subsistence. Second, we show that, across the globe, ethnolinguistic groups with a tradition of herding have substantially more frequent and severe conflict today, including civil conflict. Third, we provide evidence suggesting that the link between ancestral herding and contemporary conflict is largely driven by retaliatory conflicts. Fourth, to better identify psychological mechanisms, we use globally representative survey data to document that the descendants of herders have significantly more pronounced tendencies to seek revenge and punish. Fifth, in historical data, herding societies were more likely to develop a culture of honor and deem violence morally appropriate.

Our measure of traditional pastoralism follows Becker (forthcoming), who constructs an ethnicity-level measure of the pre-industrial reliance on pastoral production using information contained in the *Ethnographic Atlas* (Murdock, 1967). The measure codes the fraction of subsistence that is obtained from animals that require herding.

We then examine whether a tradition of herding shapes conflict and revenge-taking today. The possibility that the culture of honor is relevant for larger-scale conflict events, including 'civil conflict' events that include the state on one side, is motivated by a rich body of anecdotal and ethnographic evidence that has emphasized the role of vengeance in fueling violence against the state. Marchais et al. (2022) describe how revenge-taking motives directly contributed to the conflict between the state and rebel groups in the Democratic Republic of the Congo. Revenge-taking motives have been described as being a key contributor (along with state predation) to popular support for Jihadist rebel movements in Western Africa (Benjaminsen and Ba, 2019, 2021) and for the civil conflict in Somalia (Lewis, 1994).

To study the link between a tradition of herding and contemporaneous conflict, we leverage detailed information on the location and incidence of conflicts from the *Uppsala Conflict Data Program* (*UCDP*), the world's main provider of data on organized violence. Our main analysis

[3]Evidence based on agent-based modeling provides some formal support for this presumption (Nowak, Gelfand, Borkowski, Cohen and Hernandez, 2016).

compares ethnolinguistic groups that reside within the same country but potentially differ in their historical reliance on herding. We find that populations that relied on herding to a greater extent historically tend to have more conflicts today. Consistent with existing findings on homicides (Grosjean, 2014), we find that a tradition of herding is associated with a greater prevalence of smaller-scale conflicts that are more localized and that do not involve a government. Yet, a tradition of herding is also strongly associated with civil conflict events, i.e., conflicts that involve a representative of a government (we do not consider wars between countries). In the *UCDP* data, the median civil conflict involves two deaths (the average is 14). While fairly small, the incidents are important because they can escalate, generating tensions and grievances that can instigate and/or fuel full-scale civil wars.

Given the correlational, reduced-form nature of our analysis, we provide an extensive set of robustness checks. First, we show that our results are robust to controlling for many economic, social, and historical determinants of conflict that have been emphasized in the literature, such as contemporary local development, historical development and institutions, ethnic fractionalization and polarization, terrain ruggedness, and population density. In these analyses, tests in the spirit of Oster (2019) consistently suggest that omitted variables do not drive our results. Second, we show that while herding societies historically differ from other societies in a number of ways, few of the other characteristics recorded in the *Ethnographic Atlas* are correlated with conflict, and controlling for them never meaningfully affects our estimates.

From the perspective of the 'culture of honor' hypothesis, herding should be linked specifically to the occurrence of revenge-related conflicts. We thus check whether a tradition of herding is not only linked to the presence of conflicts in general but to violence driven by revenge-taking specifically. We do so in two ways. First, by examining variation in the exact timing of conflict events, we find that the effect of herding on conflict is strongest in the days immediately following a conflict event. The effect declines as time passes, approaching zero after a number of weeks. In other words, a tradition of herding is entirely uncorrelated with conflict in the absence of previous conflict events, suggesting that our results operate through a retaliation channel.

Second, to provide additional direct evidence on the revenge-taking mechanism, we complement the *UCDP* analysis with an analysis that uses the *ACLED* conflict data, available for the African continent, which contains detailed descriptions of conflict events that allow us to identify conflict events that involve revenge motivations. Using a multinomial estimator, we find that

ancestral herding is strongly associated with conflicts described as having revenge or retaliation as a motive, yet uncorrelated with conflict events not described as involving revenge.

While this evidence suggests that the link between historical herding and conflict reflects the proclivity to seek revenge, we provide further complementary evidence for this mechanism by leveraging the *Global Preferences Survey*, or GPS (Falk, Becker, Dohmen, Enke, Huffman and Sunde, 2018). This globally representative dataset includes detailed information on respondents' willingness to take revenge and punish others for unfair behavior. The analysis leverages within-country variation in the GPS. We link respondents' revenge-taking and punishment to historical variation in herding across subnational regions. In all analyses, we find that traditional herding is strongly predictive of individuals' willingness to take revenge and punish others for unfair behavior.

Finally, we complement our analysis of psychological mechanisms using contemporary GPS data by examining similar patterns using historical data. If herding generated a culture of honor, we should expect to see these same cultural proclivities in the past. To study this, we make use of the recently released dataset on traditional folklore that provides rich information on the beliefs, customs, and stories that were passed through the generations by word of mouth in the form of tales and narratives (Michalopoulos and Xue, 2021). Studying variation across approximately 1,100 ethnic groups, we find that groups that relied more strongly on herding are more likely to have traditional folklore that contains motifs related to vengeance, punishment, retaliation, and, ultimately, violence. We also examine information on the moral beliefs of 60 ethnic groups from across the globe available from the *Standard Cross-Cultural Sample*. We find that, historically, a dependence on herding is associated with greater acceptability of violence, particularly outside of one's local community.

In all, the evidence suggests that a tradition of herding is an important determinant of armed conflicts around the globe. A diverse set of evidence suggests that the underlying mechanism is a 'culture of honor' – psychological and cultural proclivities related to revenge and punishment. The results for revenge-taking also resolve a potential puzzle that may arise in interpreting conflicts through the lens of a 'culture of honor.' One perspective is that, in equilibrium, herding societies with strong revenge norms should not have more conflict due to a deterrence effect on potential attackers. Our results are consistent with such a perspective. Groups with a tradition of herding do not have an increased baseline probability of conflict. Rather, they only see more conflicts conditional on a first conflict event, plausibly driven by retaliatory motives.

Our findings contribute to the existing evidence on honor cultures, which has focused on smaller-scale violence, such as homicides (Black-Michaud, 1975; Nisbett and Cohen, 1996; Nisbett, Polly and Lang, 1995; Cohen, 1998; Hayes and Lee, 2004; Uskul, Cross, Günsoy and Gul, 2019), including in the U.S. South (Grosjean, 2014). They extend our understanding of the consequences of honor cultures by estimating effects on economically-important conflict events, as well as the global distribution of tendencies for punishment and revenge-taking.

Our findings also contribute to a deeper understanding of traditionally pastoral groups. Earlier studies have highlighted how a tradition of herding affects female sexuality and child marriage (Becker, 2023, forthcoming). McGuirk and Nunn (2025) study the role of climate change and weather shocks for conflict between transhumant pastoralists and agriculturalists. We provide a series of analyses that suggest that our mechanism is orthogonal to the one analyzed in their paper, and that our results are not driven by transhumant pastoralists.

Finally, by connecting a traditional mode of subsistence to contemporary conflict, our findings also contribute to a better understanding of how historical factors can shape contemporary large-scale conflicts and wars (Jha, 2013; Besley and Reynol-Querol, 2014; Michalopoulos and Papaioannou, 2016) as well as the psychological and social determinants of conflict and warfare (Miguel, Saiegh and Satyanath, 2011; Guarnieri and Tur-Prats, 2023; Tur-Prats, 2021). Related are also studies that have shown that social factors can affect the incidence of conflict, whether they arise due to social obligations (Moscona, Nunn and Robinson, 2020), norms of punishment and cooperation (Fouka and Schlapfer, 2022), status competition (Ager, Bursztyn, Leucht and Voth, 2022), or the influence of leaders or high-status individuals (Dippel and Heblich, 2021; Bai, Jia and Yang, 2023; Jha and Wilkinson, 2023; Cage, Dagorret, Grosjean and Jha, 2023).

The remainder of the paper proceeds as follows. Section 2 describes the construction of the historical herding index and how it is linked to contemporary data. Section 3 investigates the link between historical herding and contemporary conflicts. The next sections examine mechanisms: first, by highlighting the role of retaliatory conflicts (Section 4), and then by studying the relationship between historical herding and contemporary attitudes and historical folklore data on punishment and revenge-taking (Section 5). Lastly, Section 6 offers concluding thoughts.

2. Historical Measure of Economic Dependence on Herding

2.1. Data and Construction of Index

Our analysis uses information on pre-industrial reliance on herding from the *Ethnographic Atlas*, a worldwide database constructed by George Peter Murdock that contains ethnographic information for 1,265 ethnic groups (Murdock, 1967). Information for societies in the sample has been coded for the earliest period for which satisfactory ethnographic data are available or can be reconstructed. The earliest observation dates are for groups in the Old World, where early written evidence is available. For the parts of the world without a written history, the first recorded information tends to be following European contact and can be as late as the 19th or even early 20th centuries. The data capture, to the fullest extent possible, the indigenous characteristics of the group prior to industrialization and European contact.

The *Ethnographic Atlas* has recently seen widespread use in economic history, cultural economics, and cultural psychology (e.g., Alesina, Giuliano and Nunn, 2013; Michalopoulos and Papaioannou, 2013, 2014, 2016; Giuliano and Nunn, 2018; Schulz, Bahrami-Rad, Beauchamp and Henrich, 2019; Enke, 2019a). A large-scale validation study recently documented strong correlations between historical ethnic-group level characteristics in the *Ethnographic Atlas* and contemporaneous ethnic-group level measures of those same traits in independent survey data (Bahrami-Rad, Becker and Henrich, 2021).

Herding, or pastoralism, refers to the breeding, care, and use of herd animals. Unlike tending animals such as pigs or chickens, herding involves taking the herds out to natural pasture, which increases the risk of theft. We follow Becker (forthcoming) to define pre-industrial reliance on herding in the *Ethnographic Atlas* as the product of two parts: (1) the degree to which a society depended on animal husbandry (0–100%), and (2) an indicator taking the value of one if the predominant animal in a society is a herding animal (sheep, cattle, horses, reindeer, alpacas, or camels). As a result, the measure codes the fraction of economic subsistence that is due to herding.

In total, we have herding data for 1,127 historical ethnic groups. The spatial distribution of the dependence on herding measure across ethnic groups is shown in Figure 1 and the histogram of the distribution is reported in Appendix Figure A1. Societies vary substantially in their historical dependence on herding. About one-third of societies traditionally have very little or no herding

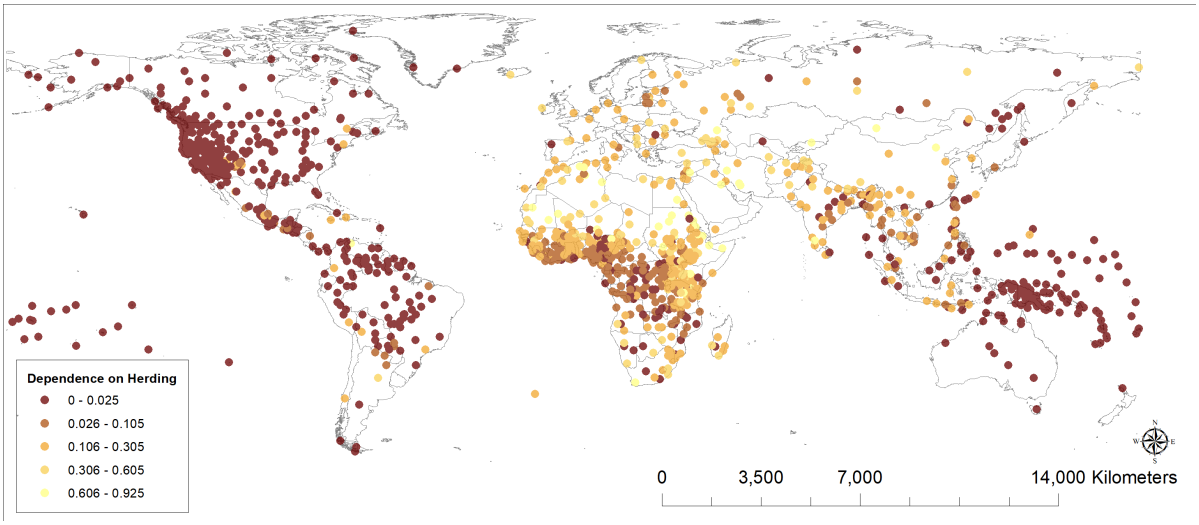


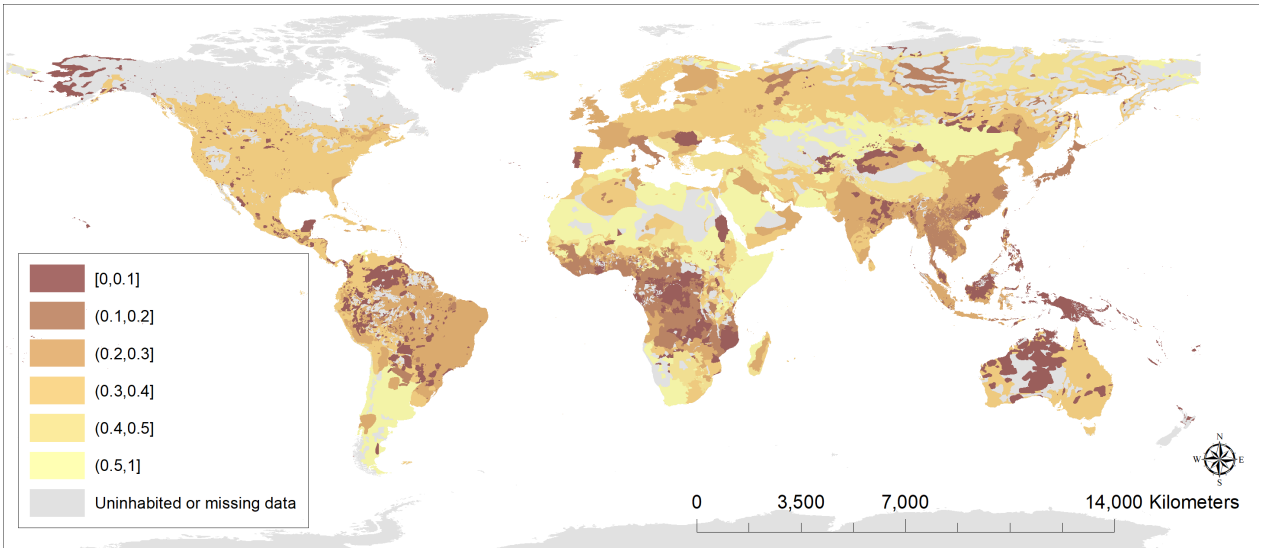
Figure 1: Global distribution of reliance on herding in the *Ethnographic Atlas*. The data apply to the pre-industrial period and capture the traditional subsistence mode of the local population. Source: Becker (forthcoming).

production (less than 5%). Very few societies depend on herding by more than 50% (about 5%). Most societies have intermediate shares of herding production, with an average dependence of 14%. Societies that depend more on pastoralism tend to be located in Northern Africa, Southern Africa, Northern Europe, the Middle East, and Central Asia.

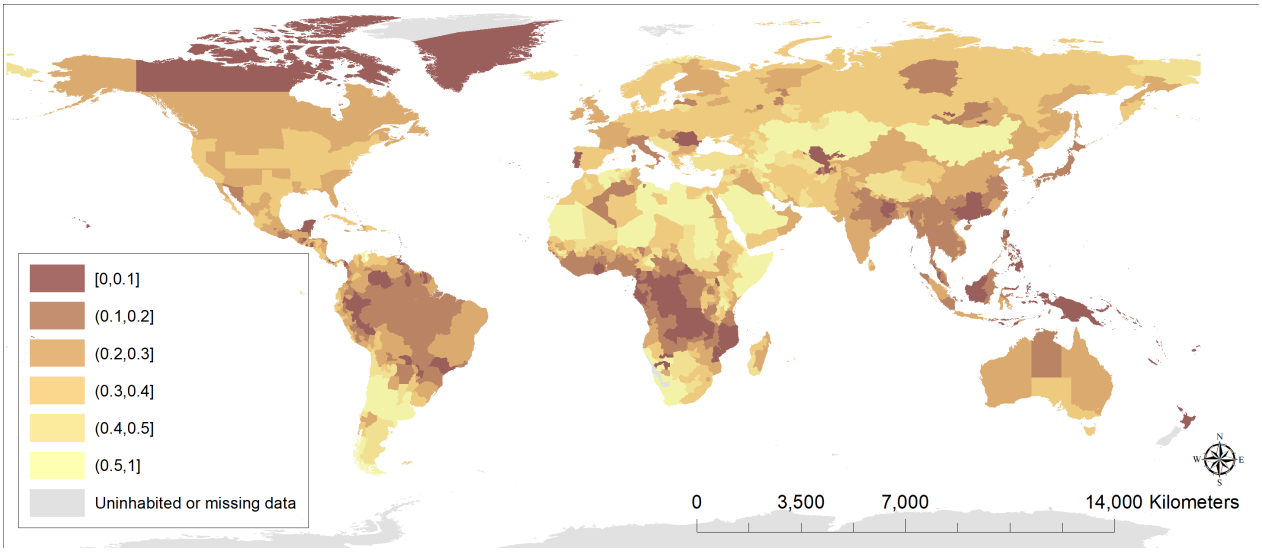
2.2. *Linkage of Herding Index to Conflicts and GPS*

Linkage to conflict events. Conflict data provide information on the precise location of contemporary conflict events. We use latitude and longitude to determine the language of the group that currently lives in that location. The location of over 7,000 language groups is taken from the *Ethnologue 16*, a database reporting the dominant language group that is present in each location across the globe. We then match each of the 7,000+ *Ethnologue* languages/dialects with one of the ethnic groups in the *Ethnographic Atlas*. As a result, we can compute, for each conflict event, the ancestral dependence on herding of the language group that lives in the respective area.

The procedure works best in locations with many language and ethnic groups, where language and ethnicity are synonymous, and movements have been limited historically. This is particularly the case in Africa, which is the focus of our auxiliary analyses that use the *ACLED* data. The procedure is also valid when there have been significant population movements. In fact, tracking ancestry through ethnicity and language takes into account the population movements, even



(a) Language group level



(b) Subnational district level

Figure 2: Global distribution of ancestral reliance on herding across language groups and subnational districts.

large-scale migrations, that have occurred worldwide. For example, individuals who speak Portuguese are connected to the Portuguese in the *Ethnographic Atlas*, even those who live in Brazil. This procedure follows the basic logic outlined in Giuliano and Nunn (2018). The variation across space in traditional reliance on herding at the language group level is shown visually in Figure 2a.

Linkage to GPS. For the analysis that uses the *GPS* survey data, we do not know the language or ethnicity of the respondents. We only know their district of residence. Therefore, to connect

individuals to traditional herding practices, we construct measures of the average dependence on herding among the ancestors of all those who live in a given subnational district. By connecting *Ethnologue* languages to *Ethnographic Atlas* ethnic groups, we know the traditional herding measure for all locations on Earth. To compute average ancestral dependence on herding at the district level, we compute weighted averages, where the weights are given by the population in any given location (taken from the *Landscan* database). Using this information, we are able to produce an estimate of the average ancestral reliance on herding across all individuals living in a given district today. The district-level measure of ancestral herding is shown in Figure 2b.

Several patterns are apparent in both subfigures of Figure 2. First, we see a large amount of variation across the globe, with North Africa and the Middle East exhibiting particularly high ancestral dependence on herding. Second, there is substantial variation also across language groups and districts within the same country. This second fact will allow for fine-grained within-country analyses that hold constant all factors that vary at the country level, including national institutions and characteristics of the government, which are particularly important when we examine civil conflicts where the arms of the national government, like the military or police, are one of the two participants in the conflict events. Descriptive statistics for all levels of aggregation are reported in Appendix Table A1.

2.3. Ecological Determinants of Herding

A recent study by Becker (forthcoming) quantifies the ecological conditions suitable for herding, creating a measure of herding suitability. Building on suitability data constructed by Beck and Sieber (2010) through maximum entropy model, Becker (forthcoming) documents that land suitability for herding and traditional subsistence from herding are strongly correlated across ethnic groups (ρ=0.59), a finding that we reproduce in Appendix Figures A2 and A3. Although the measure shows that the environment is an important determinant of herding, we do not use environmental suitability as our primary variable for multiple reasons. First, the land suitability measure for herding (vs. agriculture) that was developed by Becker (forthcoming) is unavailable for the Americas. If we were to use the measure, our analysis would no longer be global, and we would lose over one-third of our sample. Second, taking into account how the measure is constructed, it is unlikely to be more exogenous than the measure we use. As the authors document, their measure is constructed by taking ethnographic data on the prevalence

of herding – i.e., the data we use in our analysis – and then predicting these values based on flexible functional forms of a set of geographic characteristics. From the estimated parameters, the model is used to create a measure of predicted pastoral suitability. (The same procedure is used for other suitability measures.) Thus, if one is concerned about other historical factors affecting historical herding, variation from these factors may be present in the constructed herding suitability measure as well.[4] Instead, our approach, detailed in Section 3, accounts for an extensive set of observable geographic, historical, and contemporaneous characteristics that are potentially correlated with herding and/or conflict.

3. Traditional Herding and Contemporary Conflict

In its original form, the 'culture of honor' theory was written to explain relatively small-scale elements of aggression (Nisbett and Cohen, 1996), probably because psychologists tend to focus more on individual behavior than on group-level outcomes. Indeed, the vast majority of the available evidence for the validity of the 'culture of honor' theory focuses on within-group violence, such as assaults or homicides. Yet, there is also a considerable body of anecdotal evidence that attributes different types of between-group conflict to a tradition of herding and resulting norms of revenge. For example, between-group conflict among pastoralists has been documented in Northern Cameroon (Moritz, 2008), among the Turkana in East Africa (Mathew and Boyd, 2011), as well as among herders in Kenya and Ethiopia (Abbink, 2009; Galaty, 2016; Beyene, 2017). A common thread that runs through these anthropological, ethnographic, and historical contributions is the importance that grievance and revenge play in the initiation and escalation of conflict, as well as for recruitment.

One question of our study is whether these patterns also extend to larger-scale conflicts, including civil wars. There are numerous examples suggesting this possibility. For instance, the civil conflict in Somalia can be traced back to grievances and revenge-taking between competing clans (Lewis, 1994). Direct evidence from the Congo similarly places grievance and revenge at the center, particularly in explaining why militant groups have been able to successfully recruit and win the support of the local populations by appealing to retaliation (Marchais et al., 2022). Among pastoral groups in Western Africa, revenge and retaliatory motives (stemming from land

[4]For the same reason, if we were to use the measure as an instrument, because of its construction, we would not expect the IV estimates to be more reliable than the OLS estimates.

use conflicts) are important motives for their support of Jihadist rebel groups aiming to overthrow the government (Benjaminsen and Ba, 2019). For example, a recent study of the determinants of Fulani support for jihadist groups in central Mali identifies the first causes as being past human rights violations and predatory behavior of the army and other state representatives (Benjaminsen and Ba, 2021).

More generally, a desire for revenge plays a critical role in mobilizing non-state actors. As the recent study by Souleimanov, Siroky and Colombo (2023) puts it, "non-material incentives may be far stronger in the recruitment of fighters in societies with a tradition of blood revenge... in many war zones, the custom of blood revenge features as the primary motive for violent mobilization."

3.1. Conflict Data and Linkage to Pre-Industrial Ethnic Groups

Our primary data on conflict are taken from the *Uppsala Conflict Data Program* (UCDP), the world's main provider of data on organized violence. The dataset covers the whole world (with the exception of Syria) for the period 1989–2016. The unit of observation in the dataset is a conflict event, defined as an "incident where armed force was used by an organized actor against another organized actor, or against civilians, resulting in at least one direct death at a specific location and a specific date."[5] For each conflict event, the dataset reports the starting and ending dates, the conflict location's geographic coordinates, the conflict type, and the number of deaths.

Our analysis requires us to link the frequency of contemporary conflicts to historical economic dependence on herding. As discussed in Section 2 and detailed in Appendix B, we do this by using UCDP's detailed geographic information to associate the conflict events to the traditional practices of ethnic groups using the global distribution of languages and dialects mapped in the *Ethnologue*.

For our analysis, a 'language group' is one of the 7,000+ languages/dialects of the *Ethnologue* spoken in a given country. Therefore, Yoruba speakers in Nigeria are one language group, and Yoruba speakers in Benin are another. This definition allows us to cleanly control for country fixed effects when looking at variation across language groups. We then match each of the 7,000+ Ethnologue languages/dialects with one of the ethnic groups in the *Ethnographic Atlas* as our

[5]The *UCDP* dataset has a 25-death-in-any-calendar-year threshold as an inclusion criterion, and events with at least one death are included once the threshold is passed. Note that if a pair of actors meets the threshold in any year, all events associated with this pair (including those in other years, even when the threshold is not crossed) are included.

controls are defined at the ethnicity level. We cluster the standard errors at the ethnicity level and at the country level in our tables.

For each language group, we aggregate the UCDP data into three types of conflict events over the entire 1989–2016 period covered by the data:[6]

1. Total conflicts: an aggregate measure that includes all conflicts described as 'civil' or 'non-civil' conflicts below.

2. Civil conflicts: conflict events that involve the agents of the government (such as the military or police officers) as one of the participants.

3. Non-civil conflicts: conflict events that do not involve government agents as one of the participants.

Our baseline measures are the *number of conflict events* within each category.

Of note is the fact that our conflict measures omit interstate conflicts, where both actors involved are national governments. This is a form of conflict that is not relevant to our hypothesis because the location of military strikes in warfare is primarily determined by strategic objectives (the amount of land being controlled at that point, and the technologies available to both sides) rather than by revenge-taking motives of the local population. Indeed, the location of conflict events between two governments is often entirely unrelated to the local populations and, instead, imposed by geographically potentially distant governments.[7]

3.2. Estimation Strategy and Covariates

Our analysis examines the relationship between a tradition of herding and conflict today by looking across language groups globally. Our estimating equation takes the following form:

$$\text{arsinh}(y_{e,c}) = \alpha_c + \beta Herding_e + X_e^H \Gamma + X_e^C \Omega + \varepsilon_{e,c}, \tag{1}$$

where the unit of observation is a language e located in country c. We refer to this as a language group. $Herding_e$ is our measure of ancestral dependence on herding. $y_{e,c}$ is one of our measures of the number of conflict events that occur in the territory of language group e located in country c.

[6]The details of how each conflict types is identified with the UCDP data is provided in Appendix B.

[7]There are 135,181 conflicts in our dataset. Of these, the majority (103,672) are civil conflicts, 30,726 are non-civil conflicts, whereas there are only 783 interstate events.

To take into account that the conflict data have a very long right tail (large outliers), our baseline measure is the inverse hyperbolic sine (arsinh).[8] α_c denotes country fixed effects, which account for country-level determinants of conflict, including cross-country differences in real per capita GDP, the quality of domestic institutions, and international geo-political characteristics.[9]

While the inclusion of country fixed effects captures most of the determinants of conflict that have been examined in the literature, there may be other factors that vary subnationally and that could potentially confound the estimated effects of herding. Thus, our specification also includes language-group-level covariates, denoted X_e^H and X_e^C, which capture historical and contemporary characteristics, respectively, of language groups.

Given the correlational nature of our analysis, we present a wide range of empirical specifications. First, we always show a specification that only controls for country fixed effects. This is because some of the covariates that plausibly drive conflicts are endogenous to herding (such as settlement complexity or institutional quality), and we wish to ensure that the inclusion of bad controls does not drive our results.

Second, we leverage a set of baseline controls that comprises nine variables. This set includes three historical variables (X_e^H) that – as discussed in Section 2 – could be correlated with herding and capture the importance of geography, economic and institutional sophistication: the absolute value of historical latitude, settlement complexity, and levels of jurisdictional hierarchy from the *Ethnographic Atlas*. It also includes six variables that capture contemporary characteristics (X_e^C). Three variables measure contemporary social conditions potentially relevant for conflict: ethnic fractionalization, ethnic polarization, and log population density.[10] Two variables capture

[8]Since the number of conflicts is a count variable, we also test the robustness of our results using a negative binomial specification (Appendix Table A2). We also examine the relationship between herding and conflict at the extensive margin (the probability of having any conflict) and intensive margin (the frequency of conflict conditional on having any conflict) and find a positive effect at both margins (Appendix Tables A3 and A4).

[9]A question with this within-country strategy is whether there is sufficient variation in a tradition of herding among groups within countries. To provide a sense of the within-country variation, in Appendix Table A5, we provide an overview of countries with variation and their corresponding sample sizes. The table shows a list of countries with variation in herding and in bold countries with variation in both herding and conflict.

[10]Several studies have suggested a relationship between ethnic fractionalization and the likelihood of conflict (Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg, 2003; Alesina, Baqir and Easterly, 1999; Collier and Hoeffler, 1998). We construct a measure of ethnic fractionalization in the following manner. For each language group, we first generate a 500 km radius circle centered at its centroid. Letting n_i be the share of the i-th language group (in terms of land area) within the circle such that $\sum_i n_i = 1$, fractionalization is defined as $F = 1 - \sum_i n_i^2$. It captures the degree to which the circle is split into distinct groups. The results are robust when we construct the measure using buffers of 20km, 50km, 100km, and 1000km. Another important determinant of conflict is polarization, which captures how far the distribution of ethnic groups is away from the bipolar (1/2, 0, ..., 0, 1/2) distribution (Montalvo and Reynal-Querol, 2005; Esteban and Ray, 2008). We construct this variable using an analogous procedure but with the formula: $\sum_i n_i^2(1 - n_1)$.

contemporary livelihood and development: the share of land that is used for herding today and nighttime light density. Finally, we also include the terrain ruggedness of the land currently inhabited by ethnic groups since uneven and mountainous terrain has been linked to conflict (Carter, Shaver and Wright, 2019).[11] All regression tables include Oster (2019) tests for the stability of regression coefficients in proportion to the changes in R^2 induced by the covariates.

Third, we present a wide range of robustness checks that control for additional variables in the Appendix, which we summarize below.

3.3. Main Results

Estimates of equation (1) are reported in Table 1. For each type of conflict, we show the results from two specifications, one with country fixed effects only and another including, in addition, the baseline set of covariates discussed above. We again report two types of standard errors, either clustered at the *Ethnographic Atlas* ethnic group level (in parentheses) or at the country level (in square brackets).[12]

The estimated effects are very similar for the different types of conflict. They suggest that an increase in historical dependence on herding by one standard deviation increases the frequency of arsinh armed conflict by about 10% of a standard deviation. This corresponds to about 0.13 conflict events during the period 1989–2006. These relationships are always statistically highly significant, regardless of how we compute standard errors. Furthermore, the Oster-δ is always around 4 or 5, suggesting that unobservables are unlikely to drive the observed patterns.

Figure 3 reports binned scatter plots of the frequency of each conflict type as a function of historical dependence on herding, controlling for country fixed effects and the other covariates (i.e., columns 2, 4, and 6). As shown, the relationships appear quite general and not driven by a small number of influential observations or outliers.

While the effect of a tradition of herding on localized (non-civil) conflicts is expected, especially given the prior evidence on disputes between individuals and homicides, the effects on civil conflicts might be more surprising. An important point is that the category of civil conflicts includes much more than large-scale civil wars. For example, if a police officer wrongs a family

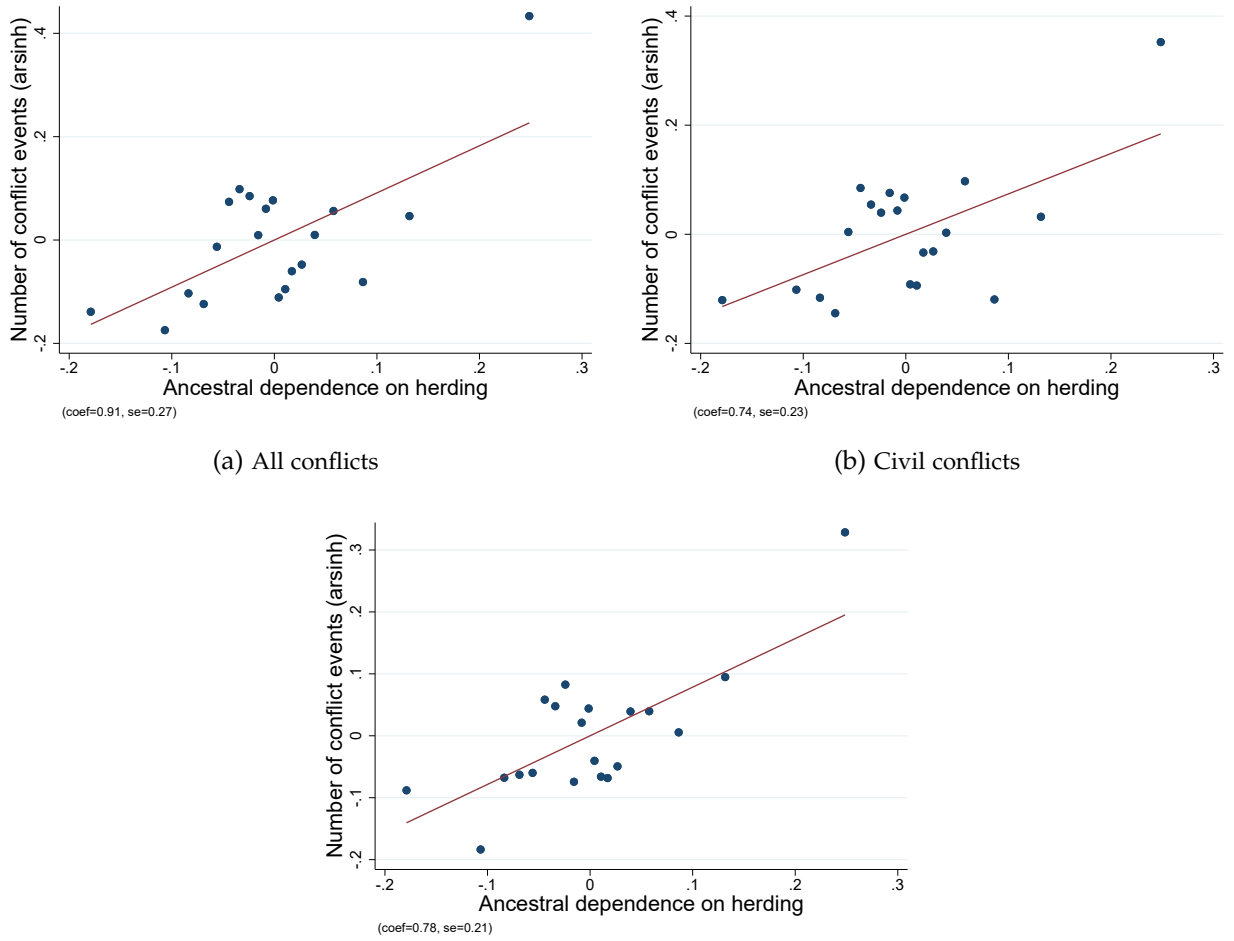
[11] Appendix B describes all of the variables included in our specification.

[12] In the civil conflicts analyses, clustering at the country level appears more appropriate because a common actor – the government – is present. Yet the specific ways in which we cluster never impact the statistical significance of our conflict results.

Table 1: Traditional herding and contemporary conflict globally

	Dependent variable: Number of conflict events (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	0.949	0.912	0.773	0.740	0.735	0.785
	(0.297)***	(0.268)***	(0.257)***	(0.234)***	(0.226)***	(0.206)***
	[0.391]	[0.337]	[0.329]	[0.284]	[0.295]	[0.255]
Settlement complexity		-0.007		-0.005		-0.008
		(0.017)		(0.016)		(0.013)
		[0.021]		[0.018]		[0.016]
Jurisdictional hierarchy		0.057		0.055		0.053
		(0.025)**		(0.022)**		(0.020)***
		[0.036]		[0.027]		[0.025]
Historical latitude (abs.)		8.194		6.323		6.480
		(7.057)		(6.151)		(4.981)
		[0.008]		[0.006]		[0.006]
Population density (ln)		0.122		0.105		0.069
		(0.015)***		(0.014)***		(0.010)***
		[0.033]		[0.031]		[0.020]
Ethnic fractionalization		-0.205		-0.286		0.047
		(0.170)		(0.155)*		(0.126)
		[0.255]		[0.227]		[0.204]
Ethnic polarization		0.336		0.693		-0.779
		(0.676)		(0.589)		(0.489)
		[0.873]		[0.775]		[0.692]
Nighttime lights		-0.018		-0.020		-0.008
		(0.007)***		(0.006)***		(0.005)
		[0.010]		[0.009]		[0.006]
Share of land for herding		0.163		0.101		0.077
		(0.122)		(0.109)		(0.089)
		[0.156]		[0.138]		[0.101]
Ruggedness		-0.624		-0.566		-0.541
		(0.200)***		(0.181)***		(0.148)***
		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.10	0.097	0.092	0.087	0.11	0.11
Oster δ		4.38		4.37		4.82
Mean of dependent var	0.63	0.63	0.51	0.51	0.35	0.36
SD of dependent var	1.45	1.46	1.31	1.31	1.05	1.06
Adj. R-squared	0.29	0.32	0.29	0.32	0.23	0.26
Number of Obs.	7,036	6,239	7,036	6,239	7,036	6,239
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.



(a) All conflicts

(b) Civil conflicts

(c) Non-civil conflicts

Figure 3: Binscatter partial correlation plots for the relationship between contemporary conflict and a tradition of herding. In each plot, a unit of observation is a language group, defined as a language from *Ethnologue* spoken in a country, $N = 6{,}239$. Each dot shows the average of (arsinh) conflict events for a given range of values of dependence of herding. Each binscatter is constructed after first partialling out country fixed effects, settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness.

(perhaps through attempted extortion that escalates into violence), and a family member takes revenge by killing the police officer, then this is coded as a civil conflict incident. Similarly, if there is a dispute between civilians and a police officer becomes involved in the violence, this is also coded as civil conflict. In both cases, one of the participants is an agent of the national government. Indeed, in our sample, 82 percent of the civil conflicts last for one day only (with an average duration of 3.8 days). The median number of people killed is two (and the average is 14). These incidents are important because they can escalate, generating tensions and grievances that can either instigate and/or fuel full-scale civil wars. To check whether the culture of honor

matters also for the size of conflicts, we re-estimate equation (1), but with the arsinh of the total number of conflict deaths as the dependent variable. As shown in Appendix Table A6, for all conflict types, herding is associated with a greater number of conflict deaths.

Outliers. Because the dependence-on-herding variable has a skewed distribution, one might be worried about the extent to which our results are driven by a few language groups with extremely high dependence on herding. To alleviate this concern, we winsorize the herding variable at the 95th percentile (0.405). Thus, any values of the variable greater than this are recoded as being 0.405. As reported in Appendix Table A7, this does not meaningfully affect the results.

3.4. Additional Covariates

In this section, we consider the robustness of our estimates to controlling for additional covariates that are either potential determinants of conflict and/or are potentially correlated with herding. The set of covariates, as well as their correlation with herding, is reported in Appendix Table A8. For our baseline covariates and for each additional measure, we report the unconditional correlation (column 1) with our herding measure and the correlation accounting for country fixed effects (column 2).[13]

The robustness of our findings to the inclusion of these covariates are reported in Appendix Tables A9–A11 for all, civil, and non/civil conflicts, respectively. In each table, we begin by first including a set of geographical and ecological controls. The estimates, reported in column 1, show that conflicts are positively correlated with distance to the border and the presence of a river but negatively correlated with distance from the capital. Higher temperatures and precipitation are also associated with a higher frequency of conflict. However, the inclusion of geographical and ecological covariates does not alter our coefficient of interest.[14]

In column 2, we report estimates that control for historical ethnic characteristics that could be related to conflict. A potential interpretation of our conflict estimates is that they are driven by the fact that herding societies tend to be less sedentary than agricultural societies, which could trigger

[13]In general, accounting for country fixed effects weakens the correlation between herding and the potential omitted variables. The within-country correlations show that herding societies tended to have less complex settlements, were more likely to be nomadic, had higher levels of jurisdictional hierarchy, and lived further from the equator. Ancestral herding is positively associated with (although with a smaller magnitude) ethnic polarization and segregation, and negatively associated with ethnic fractionalization. Historical herding is also positively correlated with the share of Muslisms and negatively correlated with the share of Christians. Several contemporary geographical characteristics are unsurprisingly correlated as well.

[14]See Appendix B for a full list of geographical and ecological covariates and detailed variable definitions.

more conflicts. We control for an indicator if the settlement pattern is nomadic or semi-nomadic ($v30 = 1$ or 2 in the *Ethnographic Atlas*) and an indicator if it is semi-sedentary or compact but impermanent ($v30 = 3$ or 4 in the *Ethnographic Atlas*). This does not affect the results. We also control for a variable indicating if the ethnic group traditionally had slavery. The coefficient on the variable is not significant, and its inclusion does not alter our results.

Next, we control for contemporaneous characteristics of language groups. Our main hypothesis is that a culture of honor plays an important role in explaining the relationship between a historical reliance on herding and contemporary conflict. An alternative explanation is that pastoralist societies have been marginalized in recent history. We make use of the *Ethnic Power Relations (EPR)* dataset to create an indicator variable that equals one if an ethnic group was "powerless," "discriminated," or "self-excluded" at any point in the country from 1989–2016 and control for this variable. We also control for a measure of ethnic segregation, which has been found to be an important determinant of conflict (Alesina and Zhuravskaya, 2011; Corvalan and Vargas, 2015).[15] As reported in column 3, the coefficient on pastoralism stays very similar to our baseline specification. Although both variables are positively correlated with conflict, their inclusion does not change the magnitude of our estimates of interest.

In column 4, we include additional variables that capture contemporary development and livelihood (the share of a group's land that is cropland and the share that is urban). These covariates are not significant, and their inclusion does not alter the magnitude and significance of our herding variable.

We also account for the potential importance of religion. In column 5, we include the estimated share of a group that belongs to the main religious denominations: Christians, Muslims, Hindus, Buddhists, Jews, and agnostics, with the excluded group being 'other' religious denominations. In column 6, we construct measures of religious fractionalization and polarization. The share of Hindus is usually negatively correlated to conflict, whereas the share of Jews and Muslims is positively correlated. Religious fractionalization and polarization are not significantly correlated with conflict. Most importantly, including the measures does not alter our results.

[15] We measure ethnic segregation at the language group by first generating a 500km radius circle around the centroid of the language group. We then define regions within the circle as 1×1 degree cells and calculate ethnic segregation across cells within the circle. Let T be the total population of the circle, t_j be the population of region j, J be the total number of regions in the circle, M be the total number of language groups in the circle, π_{jm} be the fraction of language group m in region j, and π_m be the fraction of language group m in the circle. The segregation index for the centered language group i is defined as: $S = \frac{1}{M-1} \sum_m \sum_j \frac{t_j}{T} \frac{\pi_{jm} - \pi_m}{\pi_m}$.

Lastly, we report two "kitchen sink" specifications. The specification reported in column 7 includes all covariates. Even with this demanding specification, our results remain stable. To be more selective with the inclusion of this large number of controls, we implement a LASSO regression to select predictors of conflict among the controls. The results, reported in column 8, are robust to the inclusion of this subset of variables. Finally, to provide further information on the scope for omitted variables to drive the results, we report Oster-like tests: the Oster δ is always between 4 and 5.34.

3.5. Alternative Historical Characteristics

To further verify that our measure of ancestral dependence on herding is not spuriously picking up the effects of other latent historical group-level characteristics, we examine the sensitivity of our estimates to systematically considering all other characteristics available for a broad cross-section of ethnic groups in the *Ethnographic Atlas*. These measures reflect measures of local institutional characteristics (types of elections, measures of property rights), different types of social arrangements (patrilineality/matrilineality, patrilocality/matrilocality, cousin marriage, bride price and a measure of kinship tightness), religious characteristics (the presence of moralizing gods), and female participation in agriculture as economic activity.[16] The estimates, reported in Appendix Table A12, report the relationship between each historical characteristic and contemporary conflict, while accounting for country fixed effects (Specification A). We then add the measure of reliance on herding to check whether its estimated relationship with conflict is significantly reduced (or even eliminated) after controlling for the other ethnic characteristics (Specification B). To facilitate the comparisons of coefficients, we report standardized 'beta coefficients.' We find that most other ethnic historical characteristics are not correlated with conflict, and controlling for them barely affects the coefficient of the herding variable.

3.6. Within-Africa ACLED Estimates

For groups within the African continent, we are able to use the *Armed Conflict Location and Event Data project* (*ACLED*), which, although limited in geographic coverage, is much richer than the *UCDP* data. The criteria for a conflict's inclusion in the database is considerably lower for *ACLED*

[16]See Enke (2019b) for details about the measure of kinship tightness. Other measures of economic activity, such as reliance on gathering or agriculture are, by construction, mechanically associated with the absence of herding and for that reason are not included.

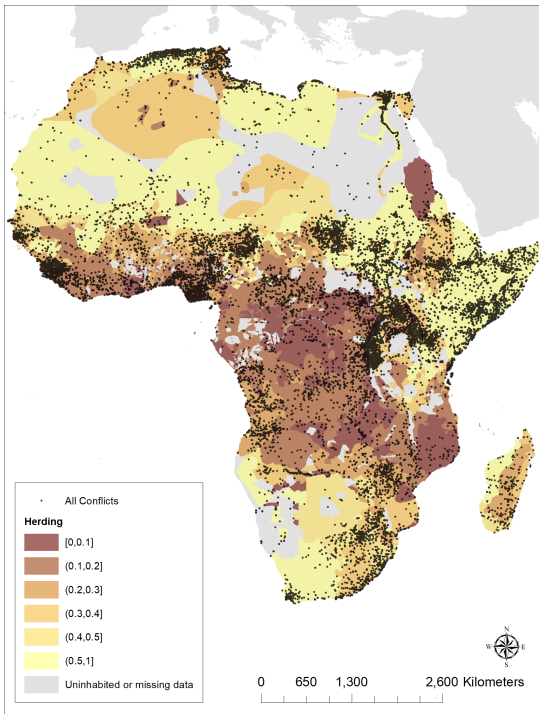
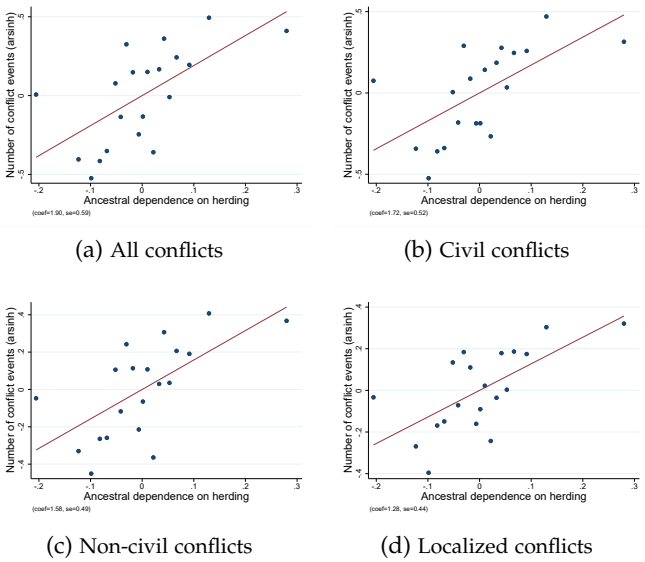


Figure 4: Map of conflict events in *ACLED* dataset, shown along with local ancestral dependence on herding.



(a) All conflicts (b) Civil conflicts

(c) Non-civil conflicts (d) Localized conflicts

Figure 5: Binscatter partial correlation plots for the relationship between contemporary conflict and a tradition of herding. In each plot, a unit of observation is a language group, defined as a language from *Ethnologue* spoken in a country, $N = 2{,}134$. Each dot shows the average of (arsinh) conflict events for a given range of values of dependence of herding. Each binscatter is constructed after first partialling out country fixed effects, settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness.

than for the *UCDP* dataset. Thus, we are able to estimate effects on smaller scale "localized" conflicts that only involve local actors and result in fewer deaths.[17] These conflicts, if they do not surpass the 25-death-in-a-calendar-year threshold, are not included in the *UCDP* data set. Most importantly, as we explain below, the *ACLED* data allow us to test explicitly for revenge-taking as a channel behind our finding of a relationship between herding and conflict.

We undertake our analysis in the same manner as with the *UCDP* data. We connect the location of a conflict event provided in the *ACLED* data to a tradition of herding by location, using the distribution of languages and dialects from the *Ethnologue*, for which we know their ethnographic characteristics based on information to the linked *Ethnographic Atlas*. We then examine the relationship between a tradition of herding and conflict when looking across language groups in the *Ethnologue*. Figure 4 shows a map of all conflict events in the *ACLED* data, overlayed on top of color coding that shows the local degree of ancestral dependence on herding.

[17]There are 139,485 conflicts in the *ACLED* dataset. Of these, 69,044 are civil conflicts and 62,457 are non-civil conflicts (among which 36,789 are "localized" conflicts). We exclude 29 events that are peaceful interactions between civilians and 7,955 events that involve international organizations or forces active outside of their main country of operation, of which 604 are interstate conflicts between military forces of two countries.

More formally, as we did with the *UCDP* data, we estimate equation (1), which includes country fixed effects. The estimates are reported in Table 2 and partial correlation binned scatterplots (for the specification with all covariates) are reported in Figure 5. We report estimates for the number of all conflicts, civil conflicts, non-civil conflicts, and localized conflicts as outcomes, without and with our baseline set of covariates. Consistent with the *UCDP* estimates, when using the *ACLED* data to look within Africa, we also find that a history of herding is associated with more conflict of all types.

As mentioned above, a benefit of the *ACLED* data is that they have a lower threshold for the inclusion of conflicts, which allows us to also measure 'localized conflicts,' smaller-scale conflicts within the same community. The effect of herding on localized conflicts is shown in the final two columns of Table 2.[18] We find that a history of herding is also associated with more localized conflicts. In comparing the magnitude of all conflicts, civil, non-civil, and localized, we find similar effects across all types of conflicts: an increase in dependence on herding by one standard deviation increases the frequency of arsinh armed conflict by 11–14% of a standard deviation.[19]

4. Evidence for the Culture of Honor Mechanism I: Revenge-taking Motives in Conflicts

We hypothesize that a tradition of herding is associated with conflict because these groups developed moral systems that support punishment and revenge-taking when one experiences wrong-doings from others. In this section, we further examine evidence for this mechanism. Our analysis proceeds in two steps. First, we directly test for the culture of honor mechanism by examining whether the link between herding and conflict arises due to revenge-taking motives and retaliatory conflicts. Second, we also test and rule out an alternative possible explanation. Since pastoral populations are often transhumant (i.e., seasonally nomadic), this characteristic of herding may be driving our results (McGuirk and Nunn, 2025).

[18] Localized conflicts are conflict events for which both actors are geographically and/or ethnically local groups. These are identified using the "Interaction" variable from *ACLED*. See Appendix E for details.

[19] Analogous to the *UCDP* analysis, with the ACLED data, we report the correlations between historical herding and the regression covariates (Appendix Table A13), we test the robustness of our results to the inclusion of a larger set of controls (Appendix Tables A14–A17), and we check the correlations between conflict in Africa and other historical ethnicity characteristics (Appendix Table A18). The coefficient on herding remains similar in magnitude and significance.

Table 2: Traditional herding and contemporary conflict in Africa

	Dependent variable: Number of conflict events (arsinh)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	1.706	1.904	1.687	1.716	1.378	1.577	1.113	1.276
	(0.512)***	(0.591)***	(0.456)***	(0.519)***	(0.436)***	(0.494)***	(0.383)***	(0.435)***
	[0.420]	[0.491]	[0.383]	[0.463]	[0.374]	[0.383]	[0.367]	[0.354]
Settlement complexity		-0.006		-0.011		-0.013		-0.032
		(0.049)		(0.044)		(0.043)		(0.037)
		[0.045]		[0.044]		[0.042]		[0.039]
Jurisdictional hierarchy		0.156		0.159		0.149		0.125
		(0.062)**		(0.053)***		(0.055)***		(0.047)***
		[0.051]		[0.053]		[0.049]		[0.045]
Historical latitude (abs.)		6.524		11.520		-1.605		-6.990
		(15.031)		(14.221)		(12.685)		(11.517)
		[0.015]		[0.016]		[0.015]		[0.014]
Population density (ln)		0.390		0.287		0.337		0.305
		(0.045)***		(0.040)***		(0.038)***		(0.033)***
		[0.071]		[0.062]		[0.061]		[0.051]
Ethnic fractionalization		0.445		0.225		0.326		0.175
		(1.026)		(0.900)		(1.019)		(0.940)
		[0.826]		[0.825]		[0.700]		[0.666]
Ethnic polarization		1.893		2.002		0.847		-0.159
		(2.592)		(2.275)		(2.424)		(2.147)
		[3.704]		[3.140]		[3.351]		[2.868]
Nighttime lights		0.004		-0.003		0.007		0.000
		(0.021)		(0.019)		(0.019)		(0.017)
		[0.039]		[0.032]		[0.035]		[0.030]
Share of land for herding		0.335		0.227		0.401		0.472
		(0.260)		(0.228)		(0.215)*		(0.189)**
		[0.299]		[0.270]		[0.252]		[0.221]
Ruggedness		-0.810		-0.179		-0.806		-0.949
		(0.561)		(0.518)		(0.454)*		(0.376)**
		[0.001]		[0.001]		[0.001]		[0.001]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.12	0.13	0.14	0.14	0.12	0.13	0.11	0.12
Oster δ		8.69		4.95		9.51		8.32
Mean of dependent var	1.63	1.65	1.23	1.24	1.20	1.21	0.92	0.93
SD of dependent var	2.07	2.08	1.83	1.84	1.77	1.78	1.57	1.58
Adj. R-squared	0.28	0.33	0.29	0.33	0.25	0.31	0.25	0.31
Number of Obs.	2,286	2,134	2,286	2,134	2,286	2,134	2,286	2,134
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	498	450	498	450	498	450	498	450

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

4.1. The Role of Revenge-Taking in Conflict

a. Interaction With Previous Conflicts

The first exercise we undertake is to check whether the effect of herding on contemporary conflicts is greater when there is potential for retaliation. In other words, we examine whether herding leads to more conflict when there is a recent history of conflict. In these settings, it is more likely that any future conflict is in retaliation or to avenge wrong-doings during past conflicts.

We examine this possibility with the following panel regression equation that varies by language group and year:

$$\ln y_{e,c,t} = \alpha_c + \lambda_t + \theta\, Herding_e + \beta\, Herding_e \times \mathbb{I}^{y>0}_{e,c,t-1} + \eta \mathbb{I}^{y>0}_{e,c,t-1} + X_e^H \Gamma + X_e^C \Omega + \varepsilon_{e,c,t}, \quad (2)$$

where e indexes language groups, c indexes the country in which the group is located, and t indexes the year. α_c denotes country fixed effects, λ_t denotes year fixed effects, and X_e^H and X_e^C denotes our vectors of historical and contemporary group-level covariates. y_{ec} is one of our measures of the number of conflict events (all, civil, and non-civil conflicts) that occur in the territory of ethnic group e located in country c. $Herding_e$ is our measure of the traditional dependence on herding of group e. The variable $\mathbb{I}^{y>0}_{e,c,t-1}$ is an indicator that equals one if there was a conflict in ethnic group e's territory in the recent past.

The first measure of past conflict that we consider codes whether there was a conflict during the previous calendar year. The estimates are reported in Table 3. In each specification, the 'Previous conflict' variable is the specification's dependent variable measured in the year prior. We find that herding only affects the incidence of conflict when there was a conflict in the previous year. By contrast, the raw herding coefficient, which captures the estimated effect following a year of peace, is very small and not statistically different from zero. In other words, the estimates in Table 3 suggest that if there is no prior conflict event, then herding and non-herding societies are equally likely to see conflict. Differences between herding and non-herding societies only emerge in the presence of a prior conflict event, with herding societies being more likely to see additional conflicts.[20]

To better understand the precise timing that underlies these patterns, we estimate a variant of equation (2), where the time dimension varies at the month level (i.e., the unit of observation

[20]We also test that the interaction effect is not driven by fractionalization or polarization, by interacting each of these two terms with previous conflicts. As reported in Appendix Tables A19 and A20, the results remain robust.

Table 3: Traditional herding and contemporary conflict globally: Interaction with previous conflicts

	Dependent variable: Number of conflict events (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	-0.001	-0.011	-0.009	-0.012	0.022	0.011
	(0.034)	(0.025)	(0.028)	(0.022)	(0.019)	(0.015)
	[0.037]	[0.036]	[0.032]	[0.030]	[0.019]	[0.020]
Herding × Previous Conflict (1y)	1.538	1.655	1.695	1.777	0.771	0.930
	(0.229)***	(0.245)***	(0.234)***	(0.253)***	(0.195)***	(0.194)***
	[0.229]	[0.273]	[0.224]	[0.275]	[0.292]	[0.294]
Previous conflict indicator (1y)	1.060	0.996	0.971	0.918	0.944	0.896
	(0.066)***	(0.070)***	(0.068)***	(0.075)***	(0.074)***	(0.077)***
	[0.080]	[0.074]	[0.084]	[0.086]	[0.108]	[0.095]
Baseline controls	No	Yes	No	Yes	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent var	0.092	0.092	0.072	0.072	0.039	0.040
SD of dependent var	0.50	0.51	0.45	0.45	0.31	0.31
Adj. R-squared	0.41	0.42	0.41	0.41	0.34	0.34
Number of Obs.	197,008	174,692	197,008	174,692	197,008	174,692
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a language group and a year. A language group is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for each year during the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level.

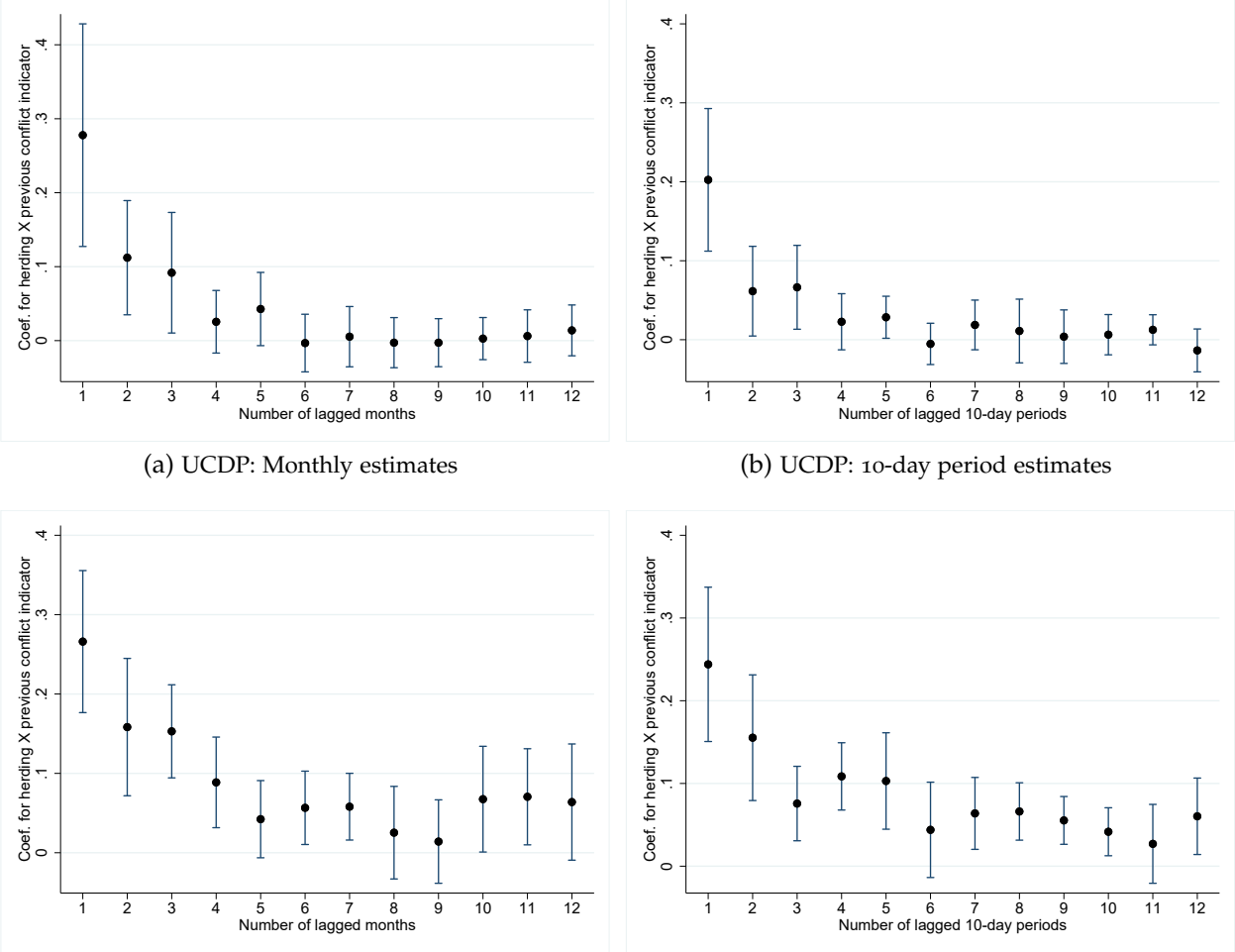
is a language group and month) and we allow the effect of herding to differ depending on whether there was conflict in each of the previous twelve months. The top left panel of Figure 6a summarizes the estimates. We find that a tradition of herding has a large positive effect on conflict in the month immediately following a previous episode of conflict. The effect declines as one moves further in time from the conflict and approaches zero starting at 4 months following conflict. Given that the duration of conflict events is fairly short – 3.8 days on average – we undertake the same exercise but using a more granular time dimension that varies at the level of 10-day intervals. As shown in the top right panel of Figure 6b, a very similar pattern emerges. We estimate a large effect of herding on the probability of conflict following the first 10 days after a conflict event. As one moves further in time from the event, the effect declines and approaches zero at about 40 days after the conflict. Our findings of quick retaliation among herding societies are consistent with ethnographic accounts showing that counterattacks are implemented quickly so that it is clear to the enemy that the attack is a retaliation for a particular wrongdoing (e.g., Mathew, 2022).

Overall, the estimates document a clear pattern. A tradition of herding is strongly associated with the occurrence of conflict events in the immediate aftermath of previous conflicts but is uncorrelated with conflicts when no prior conflict event took place. These results are consistent with the hypothesis that herding is linked to conflict through the mechanisms posited by the culture of honor theory: retaliation in response to prior wrongdoings.

Replication in the ACLED dataset. We also undertake the same exercises using the *ACLED* data for Africa. The estimates, which are reported in Appendix Tables A21–A23 and Figures 6c and 6d, show that we find the same patterns. Herding is almost exclusively linked to the emergence of conflicts in the immediate aftermath of prior conflicts, but only weakly correlated with conflicts if no prior conflict took place.

b. Duration and prolonged conflicts

Given that retaliation in the analysis of conflict increases the probability of continuation, a natural implication is that conflicts related to historical reliance on herding should also last longer. We test for this possibility in two ways. First, we use duration in months as an alternative dependent variable. The estimates, reported in Appendix Table A24 for *UCDP* conflicts and Appendix Table



(a) UCDP: Monthly estimates

(b) UCDP: 10-day period estimates

(c) ACLED: Monthly estimates

(d) ACLED: 10-day period estimates

Figure 6: Coefficient plot for the interaction terms between herding and conflict indicators for the past 12 months (panel (a)) and for the past 120 days (panel (b)). A unit of observation is a country-language group in the *Ethnologue* and a year-month for panel (a), and a 10-day period for panel (b). In the top panels, the dependent variable is the arsinh number of conflicts from *UCDP*. In the bottom panels, the dependent variable is the arsinh number of conflicts in the *ACLED* data. Control variables include country fixed effects, time period fixed effects (either year-month or 10-day period), settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, share of land used for herding, and terrain ruggedness. Error bars show 95% confidence intervals, computed based on clustering at the ethnic-group level.

A25 for *ACLED* conflicts within Africa, show that historical reliance on herding is associated with conflict when we measure them as the number of months. The standardized beta coefficients range from 0.9 and 0.11 for *UCDP* and 0.10 and 0.14 for *ACLED*.

The second strategy is to use a multinomial logit estimator that distinguishes between (1) the absence of conflict during the full time period (e.g., 1989–2016 in the *UCDP* data), (2) at least one conflict but none of them were 'prolonged,' and (3) at least one conflict and at least one of

them was 'prolonged,' where 'prolonged' is defined as follows. For all groups that experienced a conflict, we calculate the longest duration among all conflict episodes (i.e., sequence of conflict events between the same pair of actors). We then use the median length as our cutoff to divide groups who experienced conflict into those that experienced a prolonged conflict or only non-prolonged conflicts. In the UCDP data, this cutoff is 3 months, and in the *ACLED* data, it is 10 months. The estimates, reported in Appendix Table A26 and A27, show that, both globally and within Africa, the association between herding and conflict is stronger for prolonged conflicts than for temporary ones.

c. Text Analysis of Revenge-Taking in ACLED

To test more directly for revenge-taking motives, we leverage the description of conflict events provided in the *ACLED* data. An example of a description is:

> *Clashes between military and pastoralist youth group in Akot when 1 youth was killed by military forces for looting in the area. Youth group then killed 6 policeman and 4 soldiers in retaliation. 2 civilians also killed.*

We investigate whether traditional herding is more strongly associated with the frequency of conflict events that are described as involving revenge-taking actions. If the culture of honor hypothesis explains the observed relationship between ancestral herding and conflict, then we should see that this is primarily driven by herding and its association with revenge-motivated conflicts rather than non-revenge-motivated conflicts.

To classify conflict events as being revenge-related, we first retrieve from the knowledge representation project *ConceptNet* the list of top-50 terms relevant for each of the following seed words: *punish, retaliation, revenge*.[21] We then classify a conflict as revenge-related if at least one of the terms in this bag-of-words appears in the textual description. In the example above, because the word retaliation appears, it would be classified as a revenge-motivation conflict event. Among the 129,964 events in the *ACLED* database for which descriptions are available, 1,973 events report a revenge-taking action.[22] This is certainly an under-estimate because, for many events, the descriptions are quite sparse. However, we expect that the events described as being retaliatory are almost certainly revenge-motivated conflicts.

[21] See Appendix B for the complete lists of words.

[22] Of these, 645 are civil conflicts, and 1,229 are non-civil conflicts (of which 939 are "localized" ones). The other 99 conflicts involve international actors, of which 7 are interstate conflicts.

We jointly estimate the effect of herding on both revenge-motivated and non-revenge-motivated conflict events within a multinomial logit framework. We construct a categorical variable, $Incidence_{e,c}$, which, for each group and country, takes the value of 0 if no conflicts occurred on the territory from 1997–2016, the value of one 1 if at least one conflict occurred but none of them were described as revenge-motivated, and 2 if at least one event occurred that was described as revenge-motivated. We then use a multinomial logistic regression to investigate the effect of traditional economic dependence on herding on this variable.

The estimating equation is given by:

$$\begin{cases} \ln\left(\frac{Pr(Incidence_{e,c}=1)}{Pr(Incidence_{ec}=0)}\right) & = \alpha_c^1 + \beta^1 Herding_e + X_e^H \Gamma^1 + X_e^C \Omega^1 + \varepsilon_{e,c}^1 \\ \ln\left(\frac{Pr(Incidence_{e,c}=2)}{Pr(Incidence_{ec}=0)}\right) & = \alpha_c^2 + \beta^2 Herding_e + X_e^H \Gamma^2 + X_e^C \Omega^2 + \varepsilon_{e,c}^2 \end{cases} \tag{3}$$

where e indexes ethnic/language groups and c indexes the country in which the group is located. α_c denotes country fixed effects. X_e^H and X_e^C denote vectors of historical and contemporary group-level covariates. $Incidence_{e,c}$ is the categorical variable that indicates the incidence of no conflict, conflict but non-revenge conflict only, or conflict including revenge-taking conflict.

Importantly, our hypothesis is *not* simply that $\beta^2 > 0$, i.e., that herding is linked to the occurrence of conflicts that feature a revenge-taking motive. Such a correlation could effectively be mechanical and driven by the fact that herding societies have a higher base rate of conflicts. Rather, our more specific hypothesis is that $\beta^2 > \beta^1$, i.e., that the link between herding and conflict is stronger for revenge conflicts than for non-revenge ones.

We report the estimated coefficients for the latent variables and the elasticities of herding on each of the conflict categories in Table 4, with "no conflict" as the omitted category. In the notation from above, we estimate that $\hat{\beta}^1 = 0.203$ ($p = 0.72$) and $\hat{\beta}^2 = 2.589$ ($p < 0.01$), which is consistent with traditional dependence on herding strongly increasing the incidence of revenge-related conflicts, but having almost no effect on non-revenge conflicts. As noted, the effect of interest here is not that herding is linked to revenge-taking conflicts, which could be driven simply by a higher base rate (of any type of conflict) among traditional herding groups. Instead, we emphasize that $\hat{\beta}^2$ is substantially larger than $\hat{\beta}^1$, a difference that is highly significant ($p < 0.01$). Moreover, the estimated coefficient is effectively zero for non-revenge conflicts.

We check the robustness of our findings to an alternative classification that relies on the most recent (at the time of writing) GPT-4o model to identify whether a conflict description explicitly

Table 4: Traditional herding and contemporary conflict in Africa: Multinomial logit analysis

	Dependent variable: Incidence of conflict events (multinomial)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cat. 1 (omitted): no incidence								
Cat. 2: no revenge-taking								
Dependence on herding	0.204	0.797	0.661	0.898	0.364	0.960	0.303	0.635
	(0.567)	(0.723)	(0.494)	(0.652)	(0.537)	(0.694)	(0.511)	(0.654)
Cat. 3: revenge-taking								
Dependence on herding	2.590	3.139	3.346	3.655	2.882	3.209	2.647	2.658
	(0.720)***	(0.946)***	(0.807)***	(1.063)***	(0.748)***	(0.995)***	(0.736)***	(0.963)***
Baseline controls	No	Yes	No	Yes	No	Yes	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Elasticity of herding on:								
Cat. 1	-0.096	-0.16	-0.11	-0.14	-0.090	-0.14	-0.070	-0.091
Cat. 2	-0.058	-0.011	0.0070	0.027	-0.024	0.039	-0.014	0.028
Cat. 3	0.38	0.43	0.49	0.54	0.43	0.46	0.40	0.39
Share of Cat.2	0.393	0.399	0.360	0.364	0.344	0.347	0.281	0.284
Share of Cat.3	0.125	0.125	0.073	0.074	0.090	0.091	0.073	0.074
Equality of Coefficients (p-value)	0.000	0.002	0.000	0.004	0.000	0.007	0.000	0.020
Pseudo R-squared	0.14	0.19	0.16	0.20	0.14	0.19	0.14	0.20
Number of Obs.	2,286	2,134	2,286	2,134	2,286	2,134	2,286	2,134
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	498	450	498	450	498	450	498	450

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables take the value of 0 if no conflicts occurred according to the *Armed Conflict Location and Event Data Project* (ACLED) during 1997 to 2016, 1 if at least one conflict occurred but none of them were described as revenge-motivated, and 2 if at least one event occurred during this time was described as revenge-motivated. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level.

references acts of revenge. Each event was individually processed using a specifically crafted prompt (reported in Appendix B) that was carefully tested and refined to ensure that it would only label an event as true when the reference to revenge was explicit and direct. To ensure the robustness and consistency of the labeling process, each event description was labeled ten times using the same prompt.[23]

The results, reported in Appendix Table A28, are in line with the bag-of-words approach. Traditional herding is linked to a higher incidence of conflicts primarily (if not exclusively) because it increases the probability of conflicts with a revenge-taking motive.

Contemporary herding and revenge-motivated conflicts. Our research hypothesis of cultural persistence does not require that traditionally pastoral societies are still herders today. However, in the spirit of the 'culture of honor' theory, one may ask whether contemporary herders are more likely

[23]This repeated approach allowed us to set different thresholds to determine if an event is related to revenge or herding, and thus, we can evaluate the robustness of the labeling process. Our baseline approach coded an event as being related to revenge if GPT identified it as such at least 5 out of 10 times. Since GPT exhibited high consistency across runs of this task, the estimates are very similar if alternative thresholds are used.

to be involved in conflicts with a revenge-taking motive. At the language-group level, we do not know to what degree the respective group depends on herding today. However, the descriptions of conflict events in the *ACLED* data sometimes allow an inference about the subsistence mode of the parties involved. We retrieve from *ConceptNet* the top-50 list of terms relevant for each seed of *herding* and *herder* and then classify a conflict event as having herders involved if at least one term in this bag-of-words appears in the description. We then analyze the relationship between the mention of herders and revenge-taking actions across approximately 130,000 conflict events.[24]

The dependent variable is an indicator that equals one if the conflict event description mentions a revenge-related term. The independent variable is an indicator variable that equals one if the description includes a herding-related term. Consistent with a 'culture of honor' (and herding) being particularly relevant for revenge-taking, Appendix Table A29 shows that if a description mentions herding, the conflict is more likely to be described as an act of revenge or retaliation. This is true both in the raw data and if we control for description length, country fixed effects, year fixed effects, and information source fixed effects. We obtain similar results when we use the previously described GPT-4o-based strategy to identify revenge-motivated conflicts and conflicts involving herding activities (see Appendix Table A30).[25]

Discussion of the role of omitted variables. A correlational reduced-form approach such as ours is invariably subject to concerns over potential omitted variables. Almost by construction, a study like ours can never perfectly rule out that unobserved or unmeasured differences in, for example, local institutional quality are correlated with a tradition of herding and produce a higher frequency of conflicts. However, our results on the role of retaliatory conflicts – which are entirely natural and even predicted from the perspective of a 'culture of honor' – are harder to explain from the perspective of economic factors such as institutions or local development. In particular, in order for such an unobserved factor to explain our results, it would have to be that (i) this factor is correlated with a tradition of herding; (ii) this factor does not increase the probability of conflict if there was no prior conflict; (iii) this factor does not produce conflicts that do not involve a revenge motive; (iv) this factor does cause perpetuated conflicts with a retaliatory motive after an initial conflict has taken place; and (v) this factor is sufficiently uncorrelated with all of our covariates that the Oster-style tests incorrectly indicate that unobservables are unlikely to drive

[24] Among all events, 3,012 have herding-related words in their descriptions.

[25] Note that the coefficient on civil conflicts is only significant when the GPT-4o-based strategy is used.

the results. We cannot rule out that such a factor exists, but we leave it to the reader to assess the plausibility of this combination of patterns.

Discussion of the culture of honor hypothesis. A game-theoretic, rational analysis of conflict might predict that societies with strong revenge norms do not see more conflict due to a deterrence effect: potential aggressors realize that traditional herding societies are more likely to retaliate aggressively, increasing the cost of attacking. Consistent with this, in the seminal experiments of Cohen, Nisbett, Bowdle and Schwarz (1997) and Nisbett and Cohen (1996), participants from herding backgrounds (the Southern U.S.) were more polite and deferential at baseline (relative to participants from non-herding backgrounds) but became more aggressive and hostile when insulted. From a theoretical perspective, it is unclear ex-ante whether a tradition of herding should be linked to more conflict. The results reported in this section provide empirical evidence relevant to this issue. Indeed, herding societies do not have more conflict at baseline. Rather, they only have more conflict after an initial conflict event takes place. While in a theoretical world characterized by a subgame-perfect equilibrium, such initial conflict should not arise, the real world is much messier. We conjecture that, as always, there is some randomness or trembling – an initial attack occurs because a threat is misunderstood, because a state- or non-state-actor views it as in their short-run interest to start a conflict (in part because they don't bear the full cost) even though it isn't in the group's long-run interest, and so on. Once such actions (which in theory should be 'off-equilibrium') have occurred, the higher propensity for retaliatory conflicts among herders produces a correlation between herding and conflict.

4.2. Checking for the Role of Transhumance

A potential alternative to the 'culture of honor' hypothesis in explaining the results is the role of transhumance – i.e, seasonal migration – among some pastoralists. As has been recently shown, transhumance can lead to conflict on nearby seasonal herding routes within the territory of agricultural ethnic groups if the timing of migration is disturbed by adverse rainfall shocks (McGuirk and Nunn, 2025).

Conceptually, the findings we document here and those found in McGuirk and Nunn are expected to be orthogonal. Our estimates show more conflict *within* the territories of traditional pastoral groups. By contrast, McGuirk and Nunn show more conflict *outside* of the territories of

traditional pastoral groups. To more formally assess whether this alternative channel can explain our findings, we disaggregate herding populations into two groups, those who are mobile (i.e., transhumant) and those who are not. We then re-estimate equation (1), including two herding variables, one that captures transhumant herding and another that captures non-transhumant herding.[26]

The estimates for both types of herding are reported in Appendix Table A31 for the global *UCDP* sample and Appendix Table A32 for the Africa *ACLED* sample. In both samples, we find that non-transhumant herding is strongly correlated with conflict, suggesting that our findings are not solely explained by transhumance. We find that herding among transhumant groups is also associated with conflict. The estimated coefficient for transhumant herding is often larger than for non-transhumant herding. However, in none of the specifications is the difference significant at the 5% level or better.[27] The second strategy directly controls for potential spillovers that could arise from transhumant pastoralism. McGuirk and Nunn show how transhumant pastoralism causes conflict in the nearby territories that are suitable for agriculture when adverse rainfall shocks during the wet season cause herds to migrate before farmers are finished farming the land. This can result in herds damaging crops, which causes disputes that often escalate into conflict. To capture these and similar spillover mechanisms, we control for measures of the prevalence of transhumant pastoralism of all contiguous neighbors of a language group. We also allow the effect of this variable to differ depending on the average agricultural suitability of the language group itself.[28]

The estimates are reported in Appendix Tables A33 and A34 for the UCDP global and ACLED Africa samples, respectively. The top panel reports the baseline estimates for comparison. The next two panels report the estimates of interest while controlling for the transhumant pastoralism of neighbors, the group's own dependence on agriculture and the interaction between the two variables. The transhumant pastoralism measures are taken from McGuirk and Nunn (2025),

[26]The first variable is equal to the traditional herding index for groups that are identified as being migratory, and the second is the traditional herding index for groups that are not migratory. The classification of whether a group is migratory or not follows McGuirk and Nunn (2025) and is detailed in Appendix B.

[27]The coefficient on non-transumant herding loses significant in the specification for civil conflicts in the global sample. It maintains its significance in the Africa sample (see Appendix Table A32).

[28]McGuirk and Nunn (2025) predict an increasing conflict in a location (in our case a language group) if the location relies on agriculture and has neighbors who are transhumant pastoralist. Therefore, our specification includes the own suitability of a language group's polygon for agriculture, measures of the transhumant pastoralism of neighboring language groups, and an interaction between the two.

who report a narrow and broad measure based on different definitions of mobility.[29] The table reports estimates using both the narrow (Panel A) and broad (Panel B) definitions. We also report estimates using different strategies for measuring the transhumant pastoralism of a group's neighbors: the equally weighted mean, maximum value, an indicator if at least one neighbor has a transhumant pastoralism measure above 0.15, and the same measure but using either 0.35, 0.55, or 0.75 as cutoffs. In total, we report estimates using twelve neighbor transhumant pastoralism measures. In all specifications, our coefficient of interest remains positive, highly significant, and of a similar magnitude to the baseline estimate.

The final check we perform is to disaggregate conflicts between those occurring during the growing and non-growing seasons. The mechanism examined in McGuirk and Nunn (2025) is one where transhumant pastoral conflict occurs primarily in the growing season when potential grazing land is still being used to cultivate crops. We identify the growing season as April to September north of the equator and October to March south of the equator and estimate equation (1) separately for conflicts occurring during the two seasons. The results are reported in Appendix Table A35 globally and Appendix Table A36 for Africa. We find that the relationship between a tradition of herding and conflict is found for both seasons and not just during the growing season. This pattern is consistent with a culture of honor, which should matter in both seasons, driving our estimates. It is less consistent with the effects arising due to the (early) migration of transhumant pastoral groups during the growing season.

5. Evidence for the Culture of Honor Mechanism II: Data on Cultural Traits

Thus far, our results suggest that herding is linked to conflict primarily due to revenge-taking motives. We now provide additional evidence for this by examining whether descendants of traditional herders exhibit cultural traits and proclivities related to punishment and revenge-taking. We do this by first examining contemporary survey data and then analyzing historical folklore and ethnographic data.

[29]The narrow definition includes only groups that, according to the *Ethnographic Atlas*, are "nomadic or fully migratory" or "semi-nomadic;" the broad definition adds groups that are "semi-sedentary" or have "compact but impermanent settlements" (McGuirk and Nunn, 2025). Transhumant pastoralism is defined as the interaction between pastoralism and the narrow/broad definition of transhumance.

5.1. Traditional Herding and a Psychology of Punishment: Global Survey Evidence

Data. To present additional direct evidence on the link between a tradition of herding and the desire to seek revenge, we leverage self-reports of the importance of punishment and revenge in survey data from the *Global Preferences Survey* (*GPS*), a recently constructed global dataset, measuring the economic preferences of a representative sample of 80,000 people from 76 countries. The generally high quality of the *GPS* data has been confirmed by various studies that have linked responses to the *GPS* questions to various economic and social behaviors, both at the individual and at the country level (e.g., Falk et al., 2018; Enke, 2019a; Becker, Enke and Falk, 2020; Sunde, Dohmen, Enke, Falk, Huffman and Meyerheim, 2020).

The survey measures attitudes toward punishment and revenge-taking using three questions:

1. How willing are you to punish someone who treats you unfairly, even if there may be costs for you? (0–10)

2. How willing are you to punish someone who treats others unfairly, even if there may be costs for you? (0–10)

3. How much do you agree with the following statement: "If I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so"? (0–10)

We view this set of questions as ideal for our purposes because they directly capture the key psychological mechanism that underlies the culture of honor hypothesis: revenge-taking and punishing behavior that is perceived as unfair. In our analysis, we use the summary measure constructed by Falk et al. (2018) as a weighted average of the three survey questions, normalized to have mean 0 and standard deviation 1. We also consider each survey question separately. At the individual level, the correlations among the three survey items range from 0.45 to 0.71.

An attractive feature of the survey questions is that they were selected to be deployed as part of the *GPS* after they underwent an extensive ex-ante experimental validation procedure. In this validation procedure, items highly correlated with actual punishment and revenge-taking decisions in financially incentivized experiments were selected from a large set of potential survey questions. As a result, it is plausible to expect that responses to the survey questions capture both people's psychological motivations and their actual willingness to act. See Falk, Becker, Dohmen, Huffman and Sunde (2016) for details.

Linkage to Historical Herding Data. Our analysis requires that we link individual-level responses in the *GPS* to historical ethnic groups to get an estimate of how much an individual's ancestors practiced herding. Naturally, this needs to take into account population movements. Because the *GPS* does not contain information on respondents' ethnic or linguistic backgrounds, we link the data using geographic subnational region identifiers in the *GPS*, which are usually states or provinces. We follow Giuliano and Nunn (2018) and created a population-weighted measure of the ancestral reliance on herding of the inhabitants of any country or district.[30] For nearly all of the 73,949 respondents from the *GPS*, living in 951 subnational regions and 75 countries, we are able to assign them a regional-level measure of the average ancestral herding index. For a subset of the observations (9,679 individuals from 12 small countries) we are only able to link respondents to the ancestral herding measure of their country.

Estimation Strategy and Covariates. The individual-level within-country estimates connect individuals to ancestral herding using the subnational region in which they live. Specifically, we estimate the following equation:

$$y_{i,r} = \alpha_{c(r)} + \beta \textit{Herding}_r + X_i \Gamma + X_r \Omega + \varepsilon_{i,r}, \tag{4}$$

where i indexes individuals in the GPS survey, r indexes their subnational region of residence, and c the country this region lies within. $\alpha_{c(r)}$ denotes country fixed effects. $y_{i,r}$ is one of our measures of a psychology of punishment (either an aggregate summary measure or one of the underlying components) for individual i residing in subnational region r. $\textit{Herding}_r$ is subnational region k's average ancestral dependence on herding. X_i denotes a vector of individual-level covariates, includes controls for age, age squared, and the gender of the respondent.[31] X_r^H is our vector of historical covariates, measured at the regional-level: average ancestral settlement complexity, jurisdictional hierarchy, and (absolute) historical latitude. To account for non-independence of the observations, we report standard errors clustered at the level of 951 subnational regions, which is the level at which the herding index varies. To further document the robustness of the statistical significance of our findings and to account for within-country non-independence, we also report standard errors clustered at the country level.

[30] See Appendix C for full details.

[31] The inclusion of a larger set of controls, including education, income, religion, and cognitive skills, does not change the results (Appendix Table A37).

Results. The estimates of equation (4) are reported in Table 5. We report estimates for the summary measure, as well as all components, with and without our baseline set of individual and regional historical covariates. All specifications include country fixed effects. Across all specifications, we find a positive relationship between a tradition of herding and a psychology of revenge-taking. Beyond being statistically significant, the estimates are also sizeable. For example, consider the standardized beta coefficient for column 2 (reported in the bottom panel). A one-standard-deviation increase in reliance on herding is associated with an increase in the summary measure by 7.3% of a standard deviation. This magnitude is similar to the other specifications and outcome variables.

We test the robustness of our results to the concern that punishing someone who treats one unfairly might not be related to the culture of honor but only proxying for altruism. For completeness, we also run analogous 'placebo' regressions using the other measures of preferences contained in the *GPS* (altruism, trust, patience, risk aversion, and positive reciprocity). The results, reported in Table A38, show no systematic correlation between the culture of honor and most other economic preferences. The only exception is the belief that others have "only the best intentions," (referred to as 'trust' in the GPS), which is positively correlated with a tradition of herding. While this is a post-hoc interpretation, this association may be consistent with ethnographic accounts and theoretical expectations. In an environment where wrong-doings can cause a spiral of violence, individuals will take special efforts to ensure that wrong-doings do not occur in the first place. This finding is consistent with the fact that herding does not appear to affect the onset of conflict, but has a strong effect on its perpetuation once it begins.

To assess the extent to which the effect of herding on a psychology of punishment is driven by trust – unlikely given the opposite direction of the correlations – we estimate the relationship between herding and revenge-taking while including trust as an additional covariate. The results, reported in Appendix Table A39, show that the effect of herding remains significant and of similar magnitude.

5.2. Historical Evidence from Folklore and Ethnography

As our final step, we provide evidence that, in the past, herding societies were more likely to have developed a culture of honor. To this end, we rely on two data sources that quantify the cultural

Table 5: The historical origins of a psychology of punishment: Individual-level analysis (GPS)

	Dependent variable:							
			Negative reciprocity components, 0–10 index					
	Negative reciprocity index		Punish if ... treated unfairly				Willingness to	
	First principal component		Self		Others		take revenge	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	0.453	0.493	1.337	1.448	1.366	1.380	0.813	0.982
	(0.185)**	(0.216)**	(0.520)**	(0.628)**	(0.483)***	(0.539)**	(0.492)*	(0.561)*
	[0.246]	[0.271]	[0.640]	[0.732]	[0.677]	[0.689]	[0.605]	[0.691]
Settlement complexity		0.014		0.039		0.018		0.047
		(0.019)		(0.057)		(0.049)		(0.050)
		[0.019]		[0.058]		[0.045]		[0.052]
Jurisdictional hierarchy		0.022		0.064		0.024		0.076
		(0.024)		(0.067)		(0.067)		(0.063)
		[0.031]		[0.084]		[0.082]		[0.077]
Historical latitude (abs.)		-0.004		-0.009		-0.018		-0.005
		(0.004)		(0.011)		(0.012)		(0.011)
		[0.006]		[0.014]		[0.023]		[0.012]
Age		-0.004		-0.006		-0.003		-0.022
		(0.001)***		(0.004)		(0.004)		(0.004)***
		[0.002]		[0.006]		[0.005]		[0.005]
Age squared		-0.000		-0.000		-0.000		0.000
		(0.000)***		(0.000)***		(0.000)***		(0.000)
		[0.000]		[0.000]		[0.000]		[0.000]
Female indicator		-0.159		-0.425		-0.376		-0.415
		(0.009)***		(0.028)***		(0.025)***		(0.026)***
		[0.012]		[0.038]		[0.030]		[0.036]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.067	0.073	0.065	0.070	0.066	0.067	0.040	0.048
Oster δ		233.5		183.8		31.4		-36.5
Mean of dependent var	-0.0031	-0.0031	4.20	4.20	4.35	4.35	3.63	3.63
SD of dependent var	1.00	1.00	3.04	3.04	3.04	3.04	3.00	3.00
Adj. R-squared	0.071	0.095	0.050	0.070	0.061	0.078	0.080	0.096
Number of Obs.	74,182	73,949	74,264	74,030	74,252	74,018	75,024	74,781
Number of Countries	75	75	75	75	75	75	75	75
Number of Clusters	951	951	951	951	951	951	951	951

Note. The unit of observation is an individual from the *Global Preference Survey* (GPS). The dependent variable in columns (1) and (2) is the negative reciprocity index from GPS, constructed as the first principal component of three self-assessments in GPS that measure people's propensity for altruistic punishment and for second-party punishment. The dependent variables in columns (3)–(8) correspond to the individual survey questions. Coefficients are reported with standard errors in parentheses clustered at the district level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

traits of historical societies: (i) folklore data and (ii) ethnographic information from the *Standard Cross-Cultural Sample*.

Historical folklore data. We follow Michalopoulos and Xue (2021) in quantifying ethnic groups' historical cultural beliefs and practices using textual data on folklore, which is the collection of traditional beliefs, customs, and stories of a community, often in the form of oral traditions such as tales, proverbs, and jokes, that get passed from one generation to the next by word of mouth. The anthropologist and folklorist Yuri Berezkin assembled a dataset that codes the presence of

2,564 motifs, each of which is given by a short text that summarizes the events of the folktale.[32] Given that folklorists are interested in collecting stories that are untouched by modernization, this catalog should be thought of as capturing pre-industrial societies' culture. Based on Berezkin's catalog of motifs, Michalopoulos and Xue (2021) use text analyses to construct a dataset that codes the presence of a large number of economic, psychological, and cultural concepts in a society's oral tradition. In these analyses, a concept is said to appear in a motif if either the seed word itself or one of the 50 most closely related terms, according to *ConceptNet*, is mentioned in the motif. The data contain many concepts that are related to the culture of honor hypothesis. Michalopoulos and Xue (2019) study the association between herding and 'anger' and 'retaliation.' Following this logic, we design a bag-of-words that proxies for the salience of a culture of honor in folklore. To discipline our construction of a bag-of-words, we select seeds words that follow from Nisbett and Cohen's (1996) discussion of the culture of honor in the introduction of their book. These fall into two general categories. One is using violence, including to defend one's honor or against attacks by others. The other is the notion of punishing or seeking revenge after you or your loved ones have been wronged by others. The seed words that follow from these are:

1. Violence/deterrence concepts: violence, perpetrator, strength, toughness, predation, predator, aggressiveness, affront, deterrence, defend, mayhem, guard

2. Punishment/revenge concepts: punish, retaliation, revenge

Following the methodology proposed by Michalopoulos and Xue (2021), for each of these seed words, we retrieve the top-50 list of related terms from *ConceptNet*. We then select the concepts from the folklore catalogue developed by Michalopoulos and Xue that appear in the top-50 list of our seed words.[33] For each concept, we generate a binary indicator that equals one if the concept appears in an ethnic group's folklore and zero otherwise. We then average across all concepts within a given domain (violence/deterrence and punishment/revenge) to arrive at a summary measure that captures the fraction of concepts in the domain present in a society's folklore. We also compute an overall summary measure of a culture of honor by taking the average across all concepts. Thus, our variables capture the average probability that the culture-of-honor-related concepts appear in a society's folklore. Since the probability that a given concept is mentioned in a society's folklore will mechanically be higher in societies with a larger folklore corpus, following

[32]Details on the dataset and procedure are provided in Appendix D.

[33]See Appendix B for the full list of words.

Michalopoulos and Xue (2021), we always control for the number of publications and the year of first publication (both expressed in log).

Results. The estimates are reported in Table 6. For each folklore variable, we show two specifications. In the first, we control for the log of the number of publications and the log of the year of first publication together with country fixed effects. In the second, we additionally control for historical ethnicity-level characteristics (settlement complexity, jurisdictional hierarchy, and historical latitude (abs.)). We report two types of standard errors: clustered at the country level (in parentheses) and clustered at the language phylum level (i.e., broadest language family) as defined in the *Ethnographic Atlas* (in square brackets).

We find that a history of herding is associated with traditional folktales that are more likely to be about any of the culture-of-honor-related words (columns 1 and 2), violence- or-conflict-related words (columns 3 and 4) or punishment-or-revenge-related words (columns 5 and 6). The magnitudes of the estimated effects, which are similar across dependent variables, suggest that an increase in the dependence on herding from zero to one is associated with a 16–22 percentage-point increase in the average probability that a culture-of-honor concept appears in folklore. Standardized beta coefficients, reported at the bottom of the table, suggest that a one-standard-deviation increase in herding is associated with an increase in culture-of-honor folklore by about 12–17% of a standard deviation.

The quality of the folklore data likely differs across societies. For example, the maximum number of motifs in a society's catalogue is 598, while the minimum is 2. To check whether this drives the results, Appendix Table A40 reports a robustness check that restricts the analysis to societies whose folklore consists of at least 40 motifs (the 25th percentile of the distribution). The results are very similar.[34]

A second concern is that the bag-of-words analysis ignores the context in which culture-of-honor-related terms appear. For instance, "defend" or "punishment" may be expressions of a well-functioning judicial system rather than of revenge-taking. To check this, we use GPT-4o to analyze the folklore motifs, prompting the model to determine whether any given motif contains

[34] An alternative specification consists of weighting the specification by the number of motifs, expressed in log. The results, reported in Appendix Table A41, are very similar to our baseline results

Table 6: Culture-of-honor related folklores in Ethnographic Atlas societies

	Dependent variable:					
	Share of words related to ... that appear in group's folklore					
	Violence/Deterrence/ Punishment/Revenge		Violence/Deterrence		Punishment/Revenge	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	0.167	0.194	0.160	0.190	0.218	0.223
	(0.039)***	(0.044)***	(0.042)***	(0.047)***	(0.062)***	(0.073)***
	[0.052]	[0.054]	[0.054]	[0.055]	[0.062]	[0.076]
ln(number of publications)	0.157	0.156	0.152	0.151	0.191	0.189
	(0.011)***	(0.011)***	(0.011)***	(0.011)***	(0.019)***	(0.020)***
	[0.010]	[0.009]	[0.010]	[0.010]	[0.022]	[0.023]
ln(year of first publication)	1.685	1.742	1.775	1.866	1.109	0.940
	(0.703)**	(0.821)**	(0.724)**	(0.851)**	(1.038)	(1.194)
	[0.552]	[0.617]	[0.581]	[0.653]	[0.902]	[1.005]
Settlement complexity		0.004		0.005		-0.003
		(0.005)		(0.004)		(0.008)
		[0.003]		[0.003]		[0.007]
Jurisdictional hierarchy		-0.002		-0.002		-0.006
		(0.006)		(0.006)		(0.011)
		[0.007]		[0.007]		[0.010]
Historical latitude (abs.)		0.002		0.002		0.004
		(0.001)**		(0.001)*		(0.003)
		[0.002]		[0.002]		[0.002]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.15	0.17	0.14	0.17	0.12	0.12
Oster δ		4.85		10.2		3.54
Mean of dependent var	0.51	0.50	0.49	0.49	0.62	0.62
SD of dependent var	0.22	0.22	0.21	0.21	0.34	0.34
Adj. R-squared	0.61	0.62	0.61	0.61	0.43	0.44
Number of Obs.	1,135	1,107	1,135	1,107	1,135	1,107
Number of Countries	149	148	149	148	149	148
Number of Clusters	149	148	149	148	149	148

Note. The unit of observation is a society from the *Ethnographic Atlas*. The dependent variable is the share of culture-of-honor-related terms tagged in a society's folklore by Michalopoulos and Xue (2021). The dependent variable in columns (1) and (2) is the share of all terms related to violence/deterrence or punishment/revenge. In columns (3) and (4), the dependent variable is the share of terms related to violence/deterrence and in columns (5) and (6), it is the share of terms related to punishment/revenge. Standard errors in parentheses are clustered at the country level. Standard errors in square brackets are clustered at the language phylum level (i.e., largest language family) as defined in the *Ethnographic Atlas*. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

content related to (i) violence/deterrence, and (ii) punishment/revenge.[35] The results, reported

[35]Specifically, the prompt is: "*The following is a description of a motif from folklore. Title: {title}. Description: {description}. Please determine whether the motif references any of the following concepts: violence/deterrence or revenge/punishment. Note that not all motifs relate to these concepts, and some may relate to multiple concepts. Violence/Deterrence: (True/False) Revenge/Punishment: (True/False)*" Given GPT's stochasticity, we run each prompt 10 times and then count a concept as appearing in a given motif if GPT identifies it as such at least 5 out of 10 times. GPT exhibits very high consistency across runs in this task, with 80% of all queries returning exactly the same response across all ten runs. Thus, for example, the results are very similar when we instead count a concept as appearing if GPT indicates it 10/10 times.

in Appendix Table A42, produced estimates in line with our main specification.

Evidence on Moral Views from the Standard Cross-Cultural Sample. While the analysis of folklore data shows an increased salience of punishment- and violence-related themes in the culture of herding societies, the results do not directly speak to the normative views of societies: whether people consider it morally right or wrong to engage in violent behavior, and how this depends on the social group the victim belongs to. To study this, we leverage information on the acceptability of violence in a small representative and subset of independent ethnic groups from the *Ethnographic Atlas*, obtained from the *Standard Cross-Cultural Sample (SCCS)* (Murdock and White, 1969). While this dataset has the advantage of comprising a subset of groups from the *Ehtnographic Atlas* chosen to be independent of each other and representative of the full sample, the sample size is relatively small (60 in total). Information is provided on the acceptability of violence towards three groups: members of the local community, members of the same society, and people of other societies. The original variables code each group as falling into one of the four categories: violence is (0) disapproved of, (1) tolerated, (2) accepted, (3) valued. We code the variables so that a higher value indicates greater acceptability of violence.

Table 7 reports OLS estimates showing the relationship between a greater dependence on herding and the acceptability of violence. Estimates without ethnicity-level covariates are reported in the odd-numbered columns, while those with the covariates are reported in the even-numbered columns. Both specifications include continent fixed effects. Estimates are shown for five dependent variables: the first principal component of the three violence measures (columns 1–2), their average effect size (columns 3–4), and the three measures separately (columns 5–10).[36]

Despite the small sample size, we consistently find a positive relationship between traditional herding and the acceptability of violence. In terms of quantitative magnitude, the results suggest that a one standard deviation increase in dependence on herding increases the overall acceptability of violence by 13–26% of a standard deviation.

Interestingly, the results are largely driven by the acceptability of violence towards people who are not members of one's local community. This suggests that the 'culture of honor' logic does not exclusively (or even primarily) apply to very localized within-group violence but to broader

[36]To calculate the average effect size in columns 3–4, we implement the procedure outlined in Kling, Liebman and Katz (2007) and used by Clingingsmith, Khwaja and Kremer (2009).

Table 7: The acceptability of violence in pre-industrial societies using the SCCS

	Dependent variable:									
	First principal component		Average effect size		Acceptability of violence [0-3 index] against ... Other society		Own society		Own local community	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependence on herding	1.49	1.46	0.81	0.79	1.05	0.90	1.15	1.15	0.37	0.42
	(0.69)**	(0.79)*	(0.35)**	(0.39)**	(0.53)*	(0.51)*	(0.57)**	(0.65)*	(0.38)	(0.41)
Settlement complexity		0.088		0.049		0.068		-0.00052		0.063
		(0.094)		(0.046)		(0.062)		(0.083)		(0.047)
Jurisdictional hierarchy		-0.043		-0.018		0.34		-0.22		-0.12
		(0.19)		(0.095)		(0.11)***		(0.17)		(0.11)
Historical latitude (abs.)		0.026		0.014		0.0046		0.014		0.019
		(0.014)*		(0.0072)**		(0.010)		(0.012)		(0.0084)**
Continent FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.26	0.25	0.20	0.19	0.26	0.22	0.24	0.24	0.13	0.15
Mean of dependent var	0.0035	0.0035	0	0	2.33	2.33	1.37	1.37	0.43	0.43
SD of dependent var	1.38	1.38	1	1	0.97	0.97	1.16	1.16	0.70	0.70
Adj. R-squared	-0.00076	0.0034			-0.021	0.057	0.030	0.017	-0.048	0.032
Number of Obs.	60	60	60	60	60	60	60	60	60	60

Note. The unit of observation is a society from the *Standard Cross-Cultural Sample* (SCCS). The dependent variables are derived from three variables from the SCCS that measure the acceptability of violence, using the following scale: (0) disapproved, (1) tolerated, (2) accepted, and (3) valued. Columns (1) and (2) use the first principal component of the three variables. Columns (3) and (4) report average effects size estimates, following Kling et al. (2007), using the three measures. Columns (5)–(10) report estimates for each of the three variables individually. Coefficients are reported with standard errors in parentheses. For the AES estimates reported in columns (3) and (4), the number of ethnic groups is 60 and the number of observations is 180 (6 groups and 3 outcomes). Standard errors are clustered at the ethnic group level. All other estimates report robust standard errors.

cross-group violence. This is consistent with our results on conflicts, which show large effects on forms of outgroup violence such as civil conflicts.

6. Conclusions

Our study has examined the importance of norms of punishment and revenge-taking for explaining the prevalence of within-country conflicts across the world today. Given the endogeneity of revenge to conflict incidence, we focused on a determinant of revenge-taking that has been widely emphasized in the social psychology literature; namely, the importance of traditional herding activities for shaping a 'culture of honor.'

Our analysis combined information from ethnographic sources with contemporary data on the incidence and intensity of conflicts, as well as contemporary survey data on individual values and preferences. Linking these data, we were able to test for associations between herding, revenge-taking, and conflict. We found that a tradition of herding is associated with a greater incidence and intensity of conflict and warfare, and that this is true for all types of conflicts, including civil conflicts where citizens are fighting against government agents. We found that this link between herding and conflict appears to largely reflect revenge-taking motives. Consistent

with this, we also found, using the recently developed *Global Preferences Survey*, that a history of herding is associated with participants' willingness to take revenge and punish other people for unfair behavior.

Our results have implications for both the economics literature on conflict and the literature on culture. Our insight that the culture of honor hypothesis sheds light on the emergence, duration, and severity of economically meaningful armed conflicts is relevant because the occurrence of civil war has traditionally been viewed as a puzzle among scholars in the social sciences that take a rational perspective (e.g., Fearon, 1995; Powell, 2006). Our results provide evidence that cultural values are important factors in explaining the incidence and severity of conflict. They also suggest that economic incentives shape people's moral and cultural traits, and that these, in turn, feed back into economic outcomes such as conflict. We believe that this perspective of an economically functional psychology that is shaped by material incentives is a promising path to advance the literature on morality and culture in moving beyond its traditional focus on documenting historical persistence per se.

References

Abbink, Jon, "Conflict and Social Change on the South-west Ethiopian Frontier: An Analysis of Suri Society," *Journal of Eastern African Studies*, 2009, *3* (1), 22–41.

Ager, Philipp, Leo Bursztyn, Lukas Leucht, and Hans Joachim Voth, "Killer Incentives: Rivalry, Performance, and Risk-Taking among German Fighter Pilots, 1939-45," *Review of Economic Studies*, 2022, *89* (5), 2257–2292.

Alesina, Alberto and Ekaterina Zhuravskaya, "Segregation and the Quality of Government in a Cross Section of Countries," *American Economic Review*, August 2011, *101* (5), 1872–1911.

_ , Arnaud Devleeschauwer, William Easterly, Sergio Kurlat, and Romain Wacziarg, "Fractionalization," *Journal of Economic Growth*, 2003, *8* (2), 155–194.

_ , Paola Giuliano, and Nathan Nunn, "On the Origins of Gender Roles: Women and the Plough," *Quarterly Journal of Economics*, 2013, *128* (2), 469–530.

_ , Reza Baqir, and William Easterly, "Public Goods and Ethnic Divisions," *The Quarterly Journal of Economics*, 1999, *114* (4), 1243–1284.

Alsan, Marcella, "The Effect of the TseTse Fly on African Development," *American Economic Review*, January 2015, *105* (1), 382–410.

Ayers, Edward L., *Vengeance and Justice: Crime and Punishment in the 19th Century American South*, New York: Oxford University Press, 1984.

Bahrami-Rad, Duman, Anke Becker, and Joseph Henrich, "Tabulated Nonsense? Testing the Validity of the Ethnographic Atlas," *Economics Letters*, 2021, *204*, 109880.

Bai, Ying, Ruixue Jia, and Jiaojiao Yang, "Web of Power: How Elite Networks Shaped War and Politics in China," *Quarterly Journal of Economics*, 2023, *138* (2), 1067–1108.

Becker, Anke, "Age at Marriage and Concerns over Women's Chastity," 2023.

__ , "On the Economic Origins of Restricting Women's Promiscuity," forthcoming. *Review of Economic Studies*, forthcoming.

__ **, Benjamin Enke, and Armin Falk**, "Ancient Origins of the Global Variation in Economic Preferences," in "AEA Papers and Proceedings," Vol. 110 2020, pp. 319–23.

Benjaminsen, Tor A. and Boubacar Ba, "Why Do Pastoralists in Mali Join Jihadist Groups? A Political Ecology Explanation," *Journal of Peasant Studies*, 2019, *46* (1), 1–20.

__ **and** __ , "Fulani-Dogon Killings in Mali: Farmer-Herder Conflicts as Insurgency and Counterinsurgency," *African Security*, 2021, *14* (1), 4–26.

Besley, Timothy and Marta Reynol-Querol, "The Legacy of Historical Conflict: Evidence from Africa," *American Political Science Review*, 2014, *108* (2), 319–336.

Beyene, Fekadu, "Natural resource conflict analysis among pastoralists in Southern Ethiopia," *Journal of Peacebuilding & Development*, 2017, *12* (1), 19–33.

Black-Michaud, Jacob, *Cohesive Force: Feud in the Mediterranean and the Middle East*, New York: St. Martin's Press, 1975.

Blattman, Christopher and Edward Miguel, "Civil War," *Journal of Economic Literature*, 2010, *48* (1), 3–57.

Boehm, Christopher, *Blood Revenge: The Enactment and Management of Conflict in Montenegro and Other Tribal Societies*, New York: University of Pennsylvania Press, 1987.

Burke, Marshall, Solomon M. Hsiang, and Edward Miguel, "Global Non-Linear Effect of Temperature on Economic Production," *Nature*, 2015, *527* (7577), 235–239.

Cage, Julia, Anna Dagorret, Pauline Grosjean, and Saumitra Jha, "Heroes and Villains: The Effects of Combat Heroism on Autocratic Values and Nazi Collaboration in France," *American Economic Review*, 2023, *113* (7), 1888–1932.

Carter, David B., Andrew C. Shaver, and Austin L. Wright, "Places to Hide: Terrain, Ethnicity, and Civil Conflict," *The Journal of Politics*, 2019, *81* (4), 1446–1465.

Chagnon, Napoleon A., "Life Histories, Blood Revenge, and Warfare in a Tribal Population," *Science*, 1988, *239* (4843), 985–992.

Clingingsmith, David, Asim Ijaz Khwaja, and Michael Kremer, "Estimating the Impact of The Hajj Religion and Tolerance in Islam's Global Gathering," *Quarterly Journal of Economics*, 2009, *124* (3), 1133–1170.

Cohen, Dov, "Culture, Social Organization and Patterns of Violence," *Journal of Personality and Social Psychology*, 1998, *75* (2), 408–419.

__ **, Richard E. Nisbett, Brian F. Bowdle, and Norber Schwarz**, "Insult, Aggression and the Southern Culture of Honor: An "Experimental Ethnography"," *Journal of Personality and Social Psychology*, 1997, *70* (5), 945–960.

Collier, Paul and Anke Hoeffler, "On Economic Causes of Civil War," *Oxford Economic Papers*, 1998, *50* (4), 563–573.

__ **and** __ , "Greed and Grievance in Civil War," *Oxford Economic Papers*, 2004, *56* (4), 563–595.

Corvalan, Alejandro and Miguel Vargas, "Segregation and conflict: An empirical analysis," *Journal of Development Economics*, 2015, *116*, 212–222.

Davie, Maurice R., *The Evolution of War: A Study of Its Role in Early Societies*, New Haven: Yale University Press, 1929.

Dippel, Christian and Stephan Heblich, "Leadership in Social Movements: Evidence from the "Forty-Eighters" in the Civil War," *American Economic Review*, 2021, *111* (2), 472–505.

Enke, Benjamin, "Kinship, Cooperation, and the Evolution of Moral Systems," *Quarterly Journal of Economics*, 2019, *134* (2), 953–1019.

_ , "Kinship, Cooperation, and the Evolution of Moral Systems," *Quarterly Journal of Economics*, 2019, *134* (2), 953–1019.

Esteban, Joan and Debraj Ray, "Polarization, Fractionalization and Conflict," *Journal of Peace Research*, 2008, *45* (2), 163–182.

Falk, Armin, Anke Becker, Thomas Dohmen, Benjamin Enke, David Huffman, and Uwe Sunde, "Global Evidence on Economic Preferences," *Quarterly Journal of Economics*, 2018, *133* (4), 1645–1692.

_ , _ , _ , David Huffman, and Uwe Sunde, "The Preference Survey Module: A Validated Instrument for Measuring Risk, Time, and Social Preferences," 2016. IZA Discussion Paper No. 9504.

Fearon, James D., "Rationalists Explanations for War," *International Organization*, 1995, *49* (3), 379–414.

_ **and David D. Laitin**, "Ethnicity, Insurgency, and Civil War," *American Political Science Review*, 2003, *97* (1), 75–90.

Fischer, David Hackett, *Albion's Seed: Four British Folkways in America*, New York: Oxford University Press, 1989.

Fouka, Vasiliki and Alain Schlapfer, "Culture Clash: Incompatible Reputation Systems and Intergroup Conflict," 2022. Working paper, Stanford University.

Galaty, John, "Boundary-making and Pastoral Conflict along the Kenyan–Ethiopian Borderlands," *African Studies Review*, 2016, *59* (1), 97–122.

Gastil, Raymond D., "Homicide and a Regional Culture of Violence," *American Sociological Review*, 1971, *36* (3), 412–427.

Giuliano, Paola and Nathan Nunn, "Ancestral Characteristics of Modern Populations," *Economic History of Developing Regions*, 2018, *33* (1), 1–17.

Grosjean, Pauline, "A History of Violence: The Culture of Honor as a Determinant of Homicide in the US South," *Journal of the European Economic Association*, 2014, *12* (5), 1285–1316.

Guarnieri, Eleonora and Ana Tur-Prats, "Cultural Distance and Conflict-Related Sexual Violence," *Quarterly Journal of Economics*, 2023, *138* (3), 1817–1861.

Harper, K. L., C. Lamarche, A. Hartley, P. Peylin, C. Ottlé, V. Bastrikov, R. San Martín, S. I. Bohnenstengel, G. Kirches, M. Boettcher, R. Shevchuk, C. Brockmann, and P. Defourny, "A 29-year time series of annual 300 m resolution plant-functional-type maps for climate models," *Earth System Science Data*, 2023, *15* (3), 1465–1499.

Hayes, Timothy C. and Matthew R. Lee, "The Southern Culture of Honor and Violent Attitudes," *Sociological Spectrum*, 2004, *25* (5), 593–617.

Jha, Saumitra, "Trade, Institutions and Ethnic Tolerance: Evidence from South Asia," *American Political Science Review*, 2013, *107* (4), 806–832.

_ **and Steven Wilkinson**, "Revolutionary Contagion," 2023. Stanford GSB Research Paper 4084.

Kling, Jeffrey R., Jeffrey B. Liebman, and Lawrence F. Katz, "Experimental Analysis of Neighborhood Effects," *Econometrica*, 2007, *75* (1), 83–119.

Lewis, Ioan M., *Blood and Bone: The Call of Kinship in Somali Society*, Trenton: The Red Sea Press, 1994.

Marchais, Gauthier, Christina Mastaki Mugaruka, Raul Sanchez de la Sierra, and David Qihang Wu, "Armed Conflict Beyond Methodological Individualism: Bringing the Social Context Back in: Evidence from Eastern Congo," 2022. Working paper, University of Chicago.

Mathew, Sarah, "Turkana Warriors' Call to Arms: How an Egalitarian Society Mobilizes for Cattle Raids," *Philosophical Transactions of the Royal Society B*, 2022, *377* (1851), 20210144.

__ **and Robert Boyd**, "Punishment Sustains Large-scale Cooperation in Prestate Warfare," *Proceedings of the National Academy of Sciences*, 2011, *108* (28), 11375–11380.

McGuirk, Eoin and Nathan Nunn, "Transhumant Pastoralism, Climate Change, and Conflict in Africa," *Review of Economic Studies*, 2025, *92* (1), 404–441.

Michalopoulos, Stelios and Elias Papaioannou, "Precolonial Ethnic Institutions and Contemporary African Development," *Econometrica*, 2013, *81* (1), 113–152.

__ **and** __ , "National Institutions and Subnational Development in Africa," *Quarterly Journal of Economics*, 2014, *129* (1), 151–213.

__ **and** __ , "The Long-Run Effects of the Scramble in Africa," *American Economic Review*, 2016, *106* (7), 1802–1848.

__ **and Melanie Meng Xue**, "Folklore," 2019. CEPR Discussion Paper No. DP13425.

__ **and** __ , "Folklore," *Quarterly Journal of Economics*, 2021, *forthcoming*.

Miguel, Edward, Sebastian Saiegh, and Shanker Satyanath, "Civil War Exposure and Violence," *Economic and Politics*, 2011, *23* (1), 59–73.

Montalvo, Jose G. and Marta Reynal-Querol, "Ethnic Polarization, Potential Conflict, and Civil Wars," *The American Economic Review*, 2005, *95* (3), 796–816.

Moritz, Mark, "A Critical Examination of Honor Cultures and Herding Societies in Africa," *African Studies Review*, 2008, *51* (2), 99–117.

Moscona, Jacob, Nathan Nunn, and James A. Robinson, "Segmentary Lineage Organization and Conflict in Sub-Saharan Africa," *Econometrica*, 2020, *88* (5), 1999–2036.

Murdock, George Peter, *Ethnographic Atlas*, Pittsburgh: University of Pittsburgh Press, 1967.

__ **and Douglas R. White**, "Standard Cross-Cultural Sample," *Ethnology*, 1969, *8* (4), 329–369.

Nisbett, Richard E., "Violence and U.S. Regional Culture," *American Psychologist*, 1993, *48* (4), 441–449.

__ **and Dov Cohen**, *Culture of Honor: The Psychology of Violence in the South*, Boulder: Westview Press, 1996.

Nisbett, Richard, Gregory Polly, and Silvia Lang, "Homicide and U.S. Regional Culture," in R. Barry Ruback and Neil Alan Weiner, eds., *Social and Cultural aspects of Interpersonal Violent Behavior*, New York: Springer Verlag, 1995, pp. 135–151.

Nowak, Andrzej, Michele J. Gelfand, Wojciech Borkowski, Dov Cohen, and Ivan Hernandez, "The Evolutionary Basis of Honor Cultures," *Psychological Science*, 2016, *27* (1), 12–24.

Nunn, Nathan and Diego Puga, "Ruggedness: The Blessing of Bad Geography in Africa," *Review of Economics and Statistics*, February 2012, *94* (1), 20–36.

Oster, Emily, "Unobservable selection and coefficient stability: Theory and evidence," *Journal of Business & Economic Statistics*, 2019, *37* (2), 187–204.

Peristiany, J.G., *Honor and Shame: The Values of Mediterranean Society*, London: Weidenfeld and Nicolson, 1965.

Powell, Robert, "War as a Commitment Problem," *International Organization*, 2006, *60* (1), 169–203.

Riley, Shawn J., Stephen D. DeGloria, and Robert Elliot, "A Terrain Ruggedness Index that Quantifies Topographic Heterogeneity," *Intermountain Journal of Sciences*, 1999, *5* (1–4), 23–27.

Scheff, Thomas J., *Boody Revenge*, New York: Routledge, 1994.

Schulz, Jonathan, Duman Bahrami-Rad, Jonathan Beauchamp, and Joseph Henrich, "The Church, Intensive Kinship, and Global Psychological Variation," *Science*, 2019, *366* (6466), eaau5141.

Souleimanov, Emil Aslan, David S. Siroky, and Roberto Colombo, "Blood Revenge in Civil War: Proof of Concept," *Security Studies*, 2023, *32* (1), 101–136.

Sunde, Uwe, Thomas Dohmen, Benjamin Enke, Armin Falk, David Huffman, and Gerrit Meyerheim, "Patience and Comparative Development," Technical Report, ECONtribute Discussion Paper 2020.

Tur-Prats, Ana, "Unemployment and Intimate Partner Violence: A Cultural Approach," *Journal of Economic Behavior & Organizatino*, 2021, *185* (1), 27–49.

Uskul, Ayse K., Susan E. Cross, Ceren Günsoy, and Pelin Gul, "Culture of Honor," in Shinobu Kitayama and Dov Cohen, eds., *Handbook of Cultural Psychology*, New York: The Guilford Press, 2019, pp. 793–821.

Vogt, Manuel, Nils-Christian Bormann, Seraina Rüegger, Lars-Erik Cederman, Philipp Hunziker, , and Luc Girardin, "Integrating Data on Ethnicity, Geography, and Conflict: The Ethnic Power Relations Data Set Family," *Journal of Conflict Resolution*, 2015, *59* (7), 1327–1342.

Wyatt-Brown, Bertram, *Southern Honor: Ethics and Behavior in the Deep South*, Oxford: Oxford University Press, 1982.

Online Appendix

A. Supplementary figures and tables

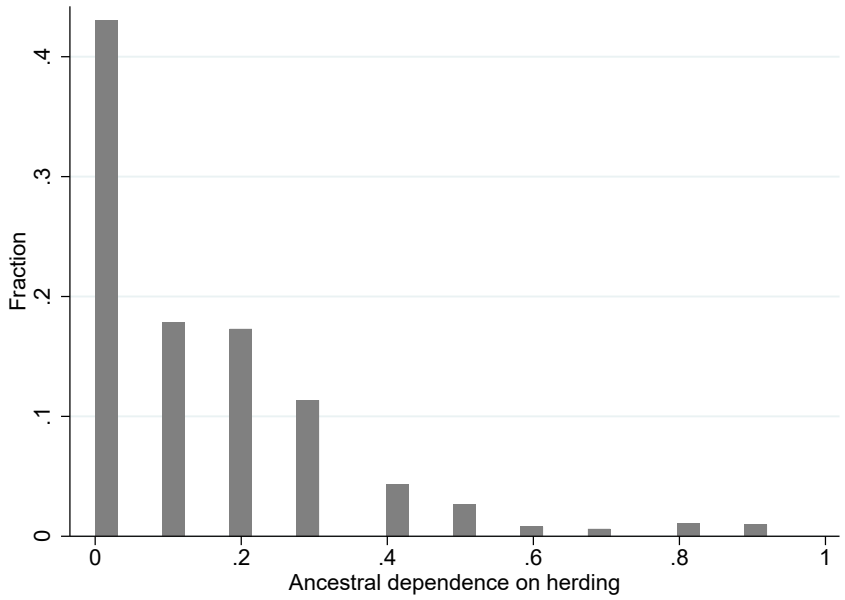


Figure A1: Distribution of herding in the *Ethnographic Atlas*.

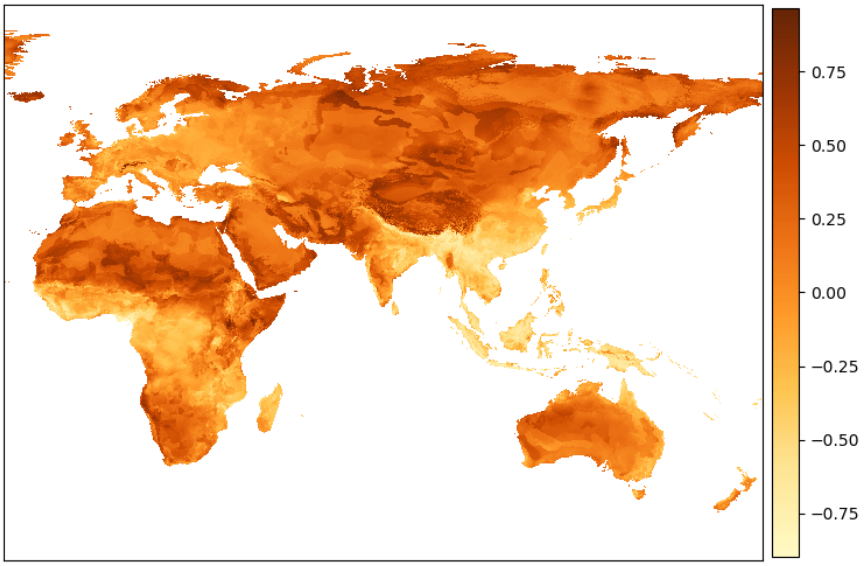


Figure A2: Land suitability for herding vs. agriculture, constructed by Becker (forthcoming) based on data from Beck and Sieber (2010). Darker areas indicate higher suitability for herding relative to agriculture. Data are available only for Africa, Europe, Asia, and Australia.

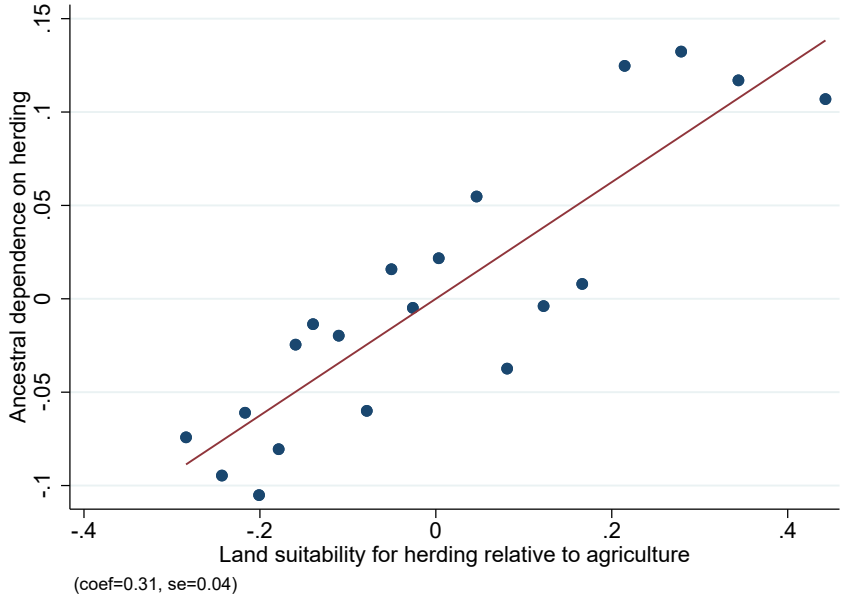
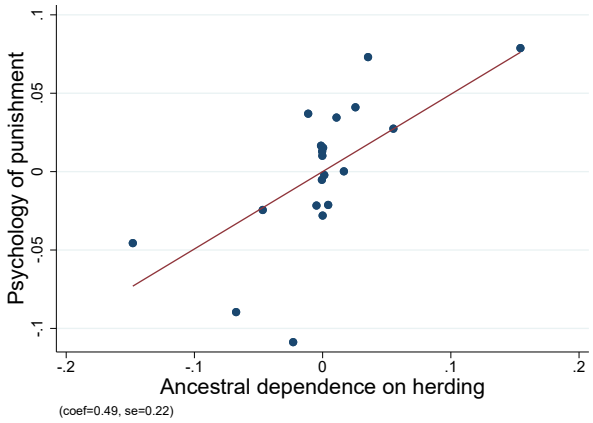
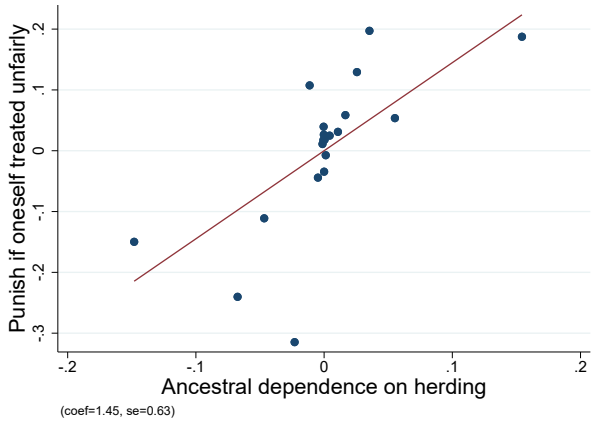


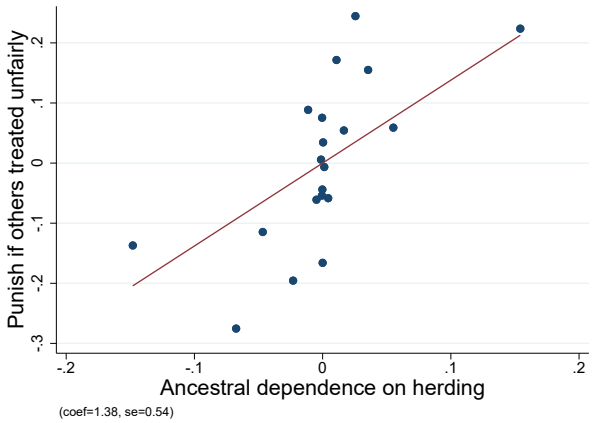
Figure A3: Binscatter plot: dependence on herding and land suitability for herding relative to agriculture for 637 societies in the *Ethnographic Atlas*. The plot controls for continent fixed effects.



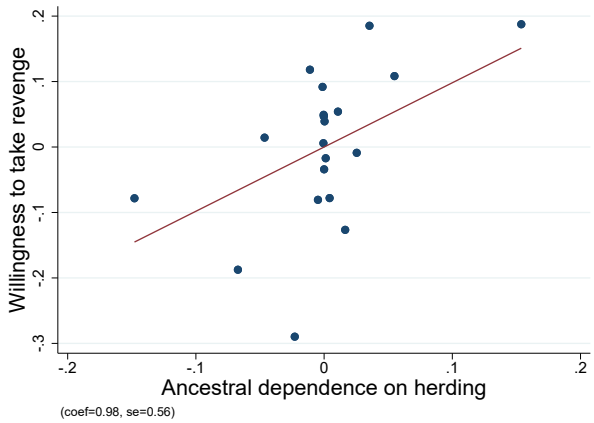
(a) Summary measure of psychology of punishment



(b) Punish if treated unfairly



(c) Punish if others treated unfairly



(d) Willingness to take revenge

Figure A4: Binscatter partial correlation plots for the relationship between a contemporary psychology of punishment in the GPS and a tradition of herding. In each plot, a unit of observation is a respondent in the GPS. Each dot shows the average of the dependent variable for a given range of values of dependence of herding. Each binscatter is constructed after first partialing out country fixed effects, settlement complexity, jurisdictional hierarchy, distance from equator, age, age squared, and female indicator.

Table A1: Descriptive statistics

	Obs.	Mean	S.D.	Max.	Min.
Panel A: The global language group level sample based on *UCDP*					
Number of conflictevents: All conflicts	7,038	18.4	233.8	14811	0
Number of conflictevents: Civil conflicts	7,038	14.2	210.0	14150	0
Number of conflictevents: Non-civil conflicts	7,038	4.26	45.0	1953	0
Dependence on herding	7,036	0.13	0.16	0.92	0
Settlement complexity	6,502	5.93	1.78	8	1
Jurisdictional hierarchy	6,319	2.01	1.23	5	1
Historical latitude (abs.)	7,038	14.4	12.9	72	0
Population density (ln)	6,952	-11.0	2.17	-3.53	-22.6
Ethnic fractionalization	7,037	0.79	0.23	0.98	0
Ethnic polarization	7,037	0.092	0.055	0.25	0
Nighttime lights	6,995	1.27	4.70	63	0
Share of land for herding	7,042	0.15	0.23	1	0
Ruggedness	6,995	153.0	181.2	1485.1	0
Panel B: The African language group level sample based on *ACLED*					
Number of conflict events: All conflicts	2,286	56.5	426.9	14654	0
Number of conflict events: Civil conflicts	2,286	29.8	237.7	8441	0
Number of conflict events: Noncivil conflicts	2,286	26.8	206.2	6213	0
number of conflict events: Localized conflicts	2,286	15.7	117.6	2598	0
Dependence on herding	2,286	0.18	0.15	0.92	0
Settlement complexity	2,200	6.10	1.45	8	1
Jurisdictional hierarchy	2,144	2.04	0.94	5	1
Historical latitude (abs.)	2,286	8.88	5.78	42	0
Population density (ln)	2,277	-10.3	1.55	-4.20	-22.6
Ethnic fractionalization	2,286	0.88	0.11	0.98	0
Ethnic polarization	2,286	0.079	0.042	0.24	0
Nighttime lights	2,280	0.60	3.50	59.9	0
Share of land for herding	2,286	0.19	0.24	1	0
Ruggedness	2,280	70.6	87.4	1006.2	0
Panel C: The individual level sample from the *Global Preference Survey*					
Negative reciprocity index (first principal component)	74,182	-0.0031	1.00	2.33	-1.59
Punish if ... treated unfairly:					
Self	74,264	4.20	3.04	10	0
Others	74,252	4.35	3.04	10	0
Willingness to take revenge	75,024	3.63	3.00	10	0
Dependence on herding	75,176	0.28	0.15	0.92	0
Settlement complexity	75,176	6.34	1.73	8	0
Jurisdictional hierarchy	75,176	3.67	1.06	5	0
Historical latitude (abs.)	75,176	31.9	15.5	64.0	0.050
Age	74,931	41.5	17.4	99	15
Age squared	74,931	2026.8	1623.0	9801	225
Female indicator	75,176	0.54	0.50	1	0
Panel D: The ethnic group level sample from *Ethnographic Atlas*					
Share of words related to ... that appear in group's folklore:					
Violence/Deterrence/Punishment/Revenge	1,135	0.51	0.22	0.96	0
Violence/Deterrence	1,135	0.49	0.21	0.95	0
Punishment/Revenge	1,135	0.62	0.34	1	0
Dependence on herding	1,135	0.15	0.19	0.92	0
Settlement complexity	1,135	5.11	2.21	8	1
Jurisdictional hierarchy	1,107	1.90	1.04	5	1
Historical latitude (abs.)	1,135	20.8	17.2	78	0
Panel E: The ethnic group level sample from *Standard Cross Cultural Sample* (SCCS)					
First principal component of the acceptance of violence	60	0.0035	1.38	2.57	-2.35
Acceptability of Violence against:					
Other society	63	2.37	0.96	3	0
Same society	76	1.33	1.12	3	0
Same local comm.	85	0.38	0.64	2	0
Dependence on herding	86	0.16	0.23	0.92	0
Settlement complexity	86	4.43	2.45	7	1
Jurisdictional hierarchy	85	1.93	1.08	5	1
Historical latitude (abs.)	86	22.6	17.9	71	0.064

Table A2: Traditional herding and contemporary conflict: Negative binomial estimates

	Dependent variable: Number of conflict events					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	6.165	3.474	5.398	3.344	5.749	3.663
	(1.031)***	(0.765)***	(0.939)***	(0.837)***	(1.056)***	(0.789)***
Settlement complexity		-0.0713		-0.0919		-0.0241
		(0.0561)		(0.0655)		(0.0636)
Jurisdictional hierarchy		0.515		0.497		0.431
		(0.0960)***		(0.110)***		(0.0935)***
Historical latitude (abs.)		63.71		75.40		66.07
		(20.60)***		(24.79)***		(20.16)***
Population density (ln)		0.609		0.602		0.667
		(0.0548)***		(0.0619)***		(0.0596)***
Ethnic fractionalization		-0.971		-0.430		0.311
		(0.749)		(0.745)		(0.781)
Ethnic polarization		4.474		9.587		-3.280
		(2.513)*		(2.915)***		(2.261)
Nighttime lights		-0.0714		-0.0880		-0.0593
		(0.0143)***		(0.0182)***		(0.0142)***
Share of land for herding		0.255		-0.0621		0.307
		(0.492)		(0.517)		(0.395)
Ruggedness		-1.591		-1.522		-2.286
		(0.611)***		(0.672)**		(0.629)***
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent var	18.4	19.3	14.2	14.8	4.27	4.54
SD of dependent var	233.8	245.4	210.0	220.2	45.0	47.6
Pseudo R-squared	0.10	0.14	0.12	0.15	0.12	0.16
Number of Obs.	7,036	6,239	7,036	6,239	7,036	6,239
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000.

Table A3: Traditional herding and contemporary conflict globally: Extensive margin

	Dependent variable: Incidence of conflict events (indicator)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	0.174	0.133	0.139	0.103	0.187	0.182
	(0.066)***	(0.068)*	(0.060)**	(0.062)*	(0.063)***	(0.061)***
	[0.099]	[0.086]	[0.095]	[0.077]	[0.085]	[0.076]
Settlement complexity		0.001		0.001		-0.002
		(0.004)		(0.004)		(0.004)
		[0.005]		[0.004]		[0.005]
Jurisdictional hierarchy		0.003		0.006		0.005
		(0.007)		(0.006)		(0.006)
		[0.013]		[0.011]		[0.011]
Historical latitude (abs.)		2.622		2.411		1.583
		(1.373)*		(1.217)**		(1.212)
		[0.002]		[0.002]		[0.002]
Population density (ln)		0.033		0.029		0.025
		(0.004)***		(0.004)***		(0.003)***
		[0.007]		[0.008]		[0.006]
Ethnic fractionalization		-0.094		-0.121		0.037
		(0.044)**		(0.041)***		(0.043)
		[0.067]		[0.064]		[0.087]
Ethnic polarization		0.362		0.353		-0.103
		(0.167)**		(0.152)**		(0.153)
		[0.237]		[0.225]		[0.261]
Nighttime lights		-0.003		-0.004		-0.001
		(0.002)		(0.002)**		(0.002)
		[0.003]		[0.003]		[0.002]
Share of land for herding		0.056		0.043		0.035
		(0.036)		(0.033)		(0.030)
		[0.048]		[0.046]		[0.039]
Ruggedness		-0.084		-0.082		-0.117
		(0.049)*		(0.045)*		(0.041)***
		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.065	0.049	0.056	0.041	0.083	0.080
Oster δ		3.48		2.93		6.04
Mean of dependent var	0.22	0.22	0.19	0.19	0.14	0.14
SD of dependent var	0.41	0.42	0.39	0.39	0.35	0.35
Adj. R-squared	0.30	0.32	0.30	0.33	0.23	0.25
Number of Obs.	7,036	6,239	7,036	6,239	7,036	6,239
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are dummy variables that take the value of one if any conflict events occurred during the period 1989-2016 according to the *Uppsala Conflict Data Program* (UCDP). Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A4: Traditional herding and contemporary conflict globally: Intensive margin

	Dependent variable: Number of conflict events (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	1.775	1.855	1.748	1.801	1.486	1.574
	(0.461)***	(0.483)***	(0.472)***	(0.513)***	(0.436)***	(0.528)***
	[0.431]	[0.446]	[0.421]	[0.485]	[0.451]	[0.433]
Settlement complexity		-0.018		-0.015		-0.004
		(0.044)		(0.045)		(0.047)
		[0.055]		[0.054]		[0.045]
Jurisdictional hierarchy		0.178		0.177		0.166
		(0.059)***		(0.060)***		(0.068)**
		[0.066]		[0.068]		[0.072]
Historical latitude (abs.)		8.928		12.770		24.072
		(20.286)		(21.191)		(18.166)
		[0.017]		[0.019]		[0.014]
Population density (ln)		0.260		0.279		0.185
		(0.044)***		(0.046)***		(0.047)***
		[0.053]		[0.053]		[0.046]
Ethnic fractionalization		-0.429		-0.394		-1.134
		(0.546)		(0.530)		(0.574)**
		[0.714]		[0.662]		[0.582]
Ethnic polarization		-2.202		-0.902		-4.586
		(2.179)		(2.003)		(2.027)**
		[1.696]		[1.679]		[1.683]
Nighttime lights		-0.035		-0.054		-0.019
		(0.012)***		(0.018)***		(0.015)
		[0.013]		[0.018]		[0.015]
Share of land for herding		0.132		-0.001		0.064
		(0.304)		(0.361)		(0.295)
		[0.354]		[0.371]		[0.363]
Ruggedness		-1.039		-1.031		-1.335
		(0.443)**		(0.426)**		(0.449)***
		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.17	0.17	0.17	0.17	0.17	0.17
Oster δ		3.14		2.82		2.56
Mean of dependent var	2.11	2.10	1.98	1.97	1.78	1.78
SD of dependent var	1.85	1.86	1.82	1.84	1.58	1.59
Adj. R-squared	0.17	0.22	0.19	0.25	0.13	0.19
Number of Obs.	1,552	1,387	1,311	1,163	985	886
Number of Countries	122	122	115	115	94	93
Number of Clusters	561	496	501	442	435	388

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A5: Countries and territories in *Ethnologue* that provide within-country variations in herding

Country	# of groups in country	Herding indicator across groups: Mean	S.D.	C.V.	Country	# of groups in country	Herding indicator across groups: Mean	S.D.	C.V.
Australia	151	0.005	0.034	7.186	**Guinea**	28	0.180	0.108	0.598
New Caledonia	35	0.006	0.035	5.916	**Saudi Arabia**	3	0.643	0.384	0.597
Canada	72	0.011	0.043	4.105	**Algeria**	15	0.285	0.170	0.596
Venezuela	29	0.035	0.141	4.042	**Iraq**	9	0.338	0.200	0.591
Solomon Islands	67	0.015	0.054	3.548	Benin	46	0.160	0.095	0.590
Colombia	74	0.030	0.102	3.350	**Niger**	12	0.431	0.249	0.578
Suriname	11	0.028	0.092	3.317	**Nigeria**	466	0.156	0.090	0.576
Brazil	166	0.017	0.046	2.715	**Sudan**	120	0.263	0.149	0.566
Guyana	12	0.034	0.090	2.648	Gabon	38	0.080	0.045	0.565
Panama	11	0.037	0.094	2.528	**Eritrea**	8	0.530	0.296	0.559
United States	144	0.022	0.055	2.523	Oman	10	0.325	0.175	0.539
Paraguay	18	0.040	0.100	2.508	**Libya**	5	0.365	0.195	0.534
Cook Islands	5	0.061	0.136	2.236	**Thailand**	55	0.137	0.073	0.532
Costa Rica	8	0.051	0.109	2.125	**Armenia**	3	0.505	0.265	0.524
Mexico	286	0.042	0.082	1.946	**Ethiopia**	83	0.303	0.154	0.508
Brunei	8	0.051	0.095	1.852	**Mauritania**	6	0.472	0.234	0.496
El Salvador	3	0.102	0.176	1.732	**Italy**	18	0.222	0.110	0.495
Bolivia	32	0.055	0.094	1.711	**Congo**	57	0.081	0.039	0.477
Indonesia	696	0.058	0.093	1.617	**Iran**	38	0.421	0.197	0.467
Malaysia	110	0.066	0.094	1.427	**Ireland**	2	0.305	0.141	0.464
Honduras	9	0.091	0.129	1.417	**Bosnia and Herzegovina**	2	0.305	0.141	0.464
Portugal	2	0.153	0.216	1.414	**Tajikistan**	11	0.405	0.185	0.458
Spain	2	0.153	0.216	1.414	**Latvia**	2	0.155	0.071	0.456
French Guiana	10	0.052	0.073	1.405	**Somalia**	9	0.750	0.338	0.451
Taiwan	12	0.060	0.082	1.351	**Myanmar**	87	0.145	0.064	0.444
Mozambique	39	0.093	0.116	1.238	**Syria**	10	0.385	0.169	0.438
Philippines	160	0.061	0.075	1.233	**South Africa**	13	0.359	0.156	0.435
Argentina	20	0.109	0.128	1.175	**Nepal**	102	0.306	0.130	0.426
Peru	88	0.094	0.108	1.142	Hungary	3	0.272	0.115	0.425
Guatemala	52	0.056	0.063	1.121	**Sierra Leone**	14	0.155	0.065	0.420
Ghana	67	0.183	0.205	1.118	Finland	5	0.465	0.195	0.419
Kazakhstan	3	0.370	0.406	1.098	**Turkey**	15	0.378	0.158	0.418
Ecuador	22	0.107	0.112	1.042	**Burkina Faso**	58	0.198	0.079	0.400
Macedonia	3	0.203	0.203	0.996	**Uganda**	36	0.255	0.100	0.394
Togo	33	0.231	0.229	0.989	**Cote dIvoire**	67	0.120	0.047	0.393
Sri Lanka	5	0.143	0.137	0.956	**Senegal**	29	0.198	0.076	0.385
Namibia	18	0.259	0.247	0.955	**Gambia**	8	0.243	0.092	0.378
Romania	5	0.324	0.296	0.915	Switzerland	5	0.225	0.084	0.372
Nicaragua	5	0.124	0.111	0.895	Viet Nam	88	0.167	0.059	0.355
Belize	7	0.161	0.142	0.881	**Afghanistan**	34	0.355	0.124	0.350
Chile	7	0.204	0.175	0.860	**Western Sahara**	2	0.405	0.141	0.349
Kuwait	2	0.505	0.424	0.840	**Egypt**	6	0.355	0.122	0.345
Lithuania	2	0.255	0.212	0.832	**United Kingdom**	6	0.238	0.082	0.343
Uzbekistan	7	0.446	0.367	0.821	Botswana	4	0.380	0.126	0.331
Cameroon	257	0.141	0.116	0.818	**Moldova**	3	0.305	0.100	0.328
Equatorial Guinea	11	0.067	0.053	0.793	**Madagascar**	10	0.325	0.103	0.318
Central African Republic	59	0.116	0.091	0.786	**Cambodia**	19	0.221	0.069	0.312
Democratic Republic of the Congo	186	0.097	0.075	0.771	**Azerbaijan**	14	0.455	0.140	0.308
Mongolia	10	0.454	0.349	0.768	**Pakistan**	47	0.314	0.095	0.304
Chad	119	0.195	0.149	0.762	Austria	4	0.330	0.096	0.290
Kyrgyzstan	3	0.438	0.321	0.733	**Georgia**	7	0.419	0.121	0.290
Angola	36	0.175	0.126	0.720	**Laos**	72	0.183	0.051	0.279
Malawi	12	0.120	0.085	0.709	**Bahrain**	2	0.255	0.071	0.277
Kenya	55	0.331	0.230	0.692	United Arab Emirates	2	0.255	0.071	0.277
Guadeloupe	2	0.205	0.141	0.690	**Israel**	4	0.305	0.082	0.268
Albania	4	0.279	0.192	0.688	Slovakia	6	0.288	0.075	0.261
Guinea-Bissau	16	0.198	0.135	0.685	Norway	5	0.545	0.134	0.246
China	198	0.214	0.146	0.684	**Liberia**	26	0.113	0.027	0.241
Tanzania	107	0.251	0.168	0.671	Sweden	6	0.555	0.122	0.221
India	300	0.204	0.137	0.671	Cyprus	2	0.355	0.071	0.199
East Timor	17	0.215	0.143	0.665	Denmark	2	0.355	0.071	0.199
Bulgaria	6	0.355	0.235	0.661	**Belgium**	4	0.280	0.050	0.179
Russian Federation	87	0.331	0.216	0.652	**Lesotho**	4	0.355	0.058	0.163
Zambia	35	0.130	0.085	0.651	**Morocco**	5	0.325	0.045	0.138
Zimbabwe	13	0.200	0.128	0.640	Turkmenistan	3	0.438	0.058	0.132
Jordan	2	0.555	0.354	0.637	**Yemen**	7	0.291	0.038	0.130
Japan	12	0.145	0.092	0.634	**Djibouti**	2	0.863	0.081	0.094
Bangladesh	8	0.154	0.095	0.617	**Bhutan**	23	0.401	0.021	0.052
Mali	30	0.275	0.168	0.611					

Invariant countries (multiple polygons but no variation in herding): Singapore, Dominican Republic, **Trinidad and Tobago**, **Comoros**, **Ukraine**, **Serbia**, Sao Tome e Principe, Poland, Liechtenstein, Czech Republic, Netherlands Antilles, Dominica, **Netherlands**, **Germany**, **Tunisia**, Fiji, Vanuatu, **Papua New Guinea**

Singleton countries (countries with only one language group): Martinique, Andorra, Belarus, France, Aruba, Saint Pierre and Miquelon, Rwanda, Turks and Caicos Islands, Saint Kitts and Nevis, Cayman Islands, Korea, North, Haiti, Iceland, Malta, Maldives, Puerto Rico, Norfolk Island, Anguilla, Burundi, Montenegro, Estonia, Grenada, Reunion, Lebanon, Uruguay, Croatia, , Luxembourg, Barbados, Bahamas, Montserrat, Cape Verde Islands, Antigua and Barbuda, Mauritius, Greece, Qatar, Greenland, British Virgin Islands, Slovenia, Bermuda, Mayotte, San Marino, United States Virgin Islands, Jamaica, Cuba, Swaziland, Falkland Islands, Seychelles, Saint Lucia, New Zealand, Korea, South, Saint Vincent and the Grenadines

The countries in bold are those that provide within-country variations in conflict.

The language groups are equally weighted in calculating the mean, standard deviation, and the coefficient of variance.

Table A6: Traditional herding and contemporary conflict globally: Number of deaths

	Dependent variable: Number of conflict deaths (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	1.456	1.370	1.182	1.124	1.303	1.383
	(0.424)***	(0.409)***	(0.367)***	(0.354)***	(0.358)***	(0.347)***
	[0.538]	[0.503]	[0.471]	[0.421]	[0.436]	[0.442]
Settlement complexity		-0.011		-0.008		-0.012
		(0.025)		(0.023)		(0.021)
		[0.027]		[0.025]		[0.025]
Jurisdictional hierarchy		0.075		0.065		0.081
		(0.037)**		(0.032)**		(0.031)***
		[0.046]		[0.037]		[0.037]
Historical latitude (abs.)		12.977		10.624		7.488
		(9.308)		(8.170)		(6.915)
		[0.010]		[0.008]		[0.008]
Population density (ln)		0.174		0.145		0.111
		(0.023)***		(0.021)***		(0.016)***
		[0.047]		[0.046]		[0.031]
Ethnic fractionalization		-0.357		-0.508		0.112
		(0.241)		(0.222)**		(0.197)
		[0.404]		[0.362]		[0.353]
Ethnic polarization		0.986		1.596		-1.382
		(1.016)		(0.901)*		(0.766)*
		[1.461]		[1.358]		[1.163]
Nighttime lights		-0.022		-0.028		-0.010
		(0.009)**		(0.008)***		(0.008)
		[0.013]		[0.013]		[0.010]
Share of land for herding		0.224		0.075		0.217
		(0.188)		(0.169)		(0.145)
		[0.235]		[0.205]		[0.178]
Ruggedness		-0.728		-0.646		-0.768
		(0.274)***		(0.251)**		(0.212)***
		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.10	0.095	0.094	0.088	0.12	0.12
Oster δ		3.95		3.97		4.57
Mean of dependent var	1.00	1.01	0.79	0.79	0.59	0.61
SD of dependent var	2.20	2.22	1.96	1.97	1.68	1.71
Adj. R-squared	0.30	0.32	0.30	0.32	0.23	0.25
Number of Obs.	7,036	6,239	7,036	6,239	7,036	6,239
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict deaths reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A7: Traditional herding and contemporary conflict globally: Winsorizing top 5% herding

	Dependent variable: Number of conflict events (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	1.003	0.943	0.797	0.735	0.721	0.796
	(0.389)***	(0.336)***	(0.325)**	(0.286)**	(0.297)**	(0.249)***
	[0.511]	[0.448]	[0.424]	[0.368]	[0.379]	[0.341]
Settlement complexity		-0.018		-0.015		-0.018
		(0.018)		(0.016)		(0.013)
		[0.022]		[0.019]		[0.018]
Jurisdictional hierarchy		0.060		0.058		0.056
		(0.025)**		(0.022)***		(0.020)***
		[0.036]		[0.027]		[0.025]
Historical latitude (abs.)		8.197		6.450		6.546
		(7.009)		(6.119)		(4.925)
		[0.008]		[0.007]		[0.006]
Population density (ln)		0.122		0.105		0.069
		(0.015)***		(0.014)***		(0.010)***
		[0.033]		[0.031]		[0.020]
Ethnic fractionalization		-0.210		-0.291		0.042
		(0.171)		(0.156)*		(0.127)
		[0.256]		[0.227]		[0.204]
Ethnic polarization		0.381		0.734		-0.737
		(0.679)		(0.592)		(0.492)
		[0.870]		[0.773]		[0.690]
Nighttime lights		-0.018		-0.020		-0.008
		(0.007)***		(0.006)***		(0.005)
		[0.010]		[0.009]		[0.006]
Share of land for herding		0.173		0.111		0.087
		(0.124)		(0.111)		(0.091)
		[0.158]		[0.140]		[0.103]
Ruggedness		-0.625		-0.565		-0.541
		(0.201)***		(0.182)***		(0.149)***
		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.089	0.083	0.079	0.072	0.089	0.097
Oster δ		3.62		3.46		4.38
Mean of dependent var	0.63	0.63	0.51	0.51	0.35	0.36
SD of dependent var	1.45	1.46	1.31	1.31	1.05	1.06
Adj. R-squared	0.29	0.32	0.28	0.32	0.23	0.25
Number of Obs.	7,036	6,239	7,036	6,239	7,036	6,239
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A8: Correlation coefficients between herding and the covariates

Variable Name	Raw	Within country	Obs.
	(1)	(2)	(3)
Baseline controls:			
Settlement complexity	-0.127**	-0.190***	6,502
Jurisdictional hierarchy	0.453***	0.154**	6,319
Historical latitude (abs.)	0.334***	0.213***	7,036
Population density (ln)	0.234***	0.019	6,950
Ethnic fractionalization	-0.028	-0.052*	7,035
Ethnic polarization	0.267***	0.078***	7,035
Nighttime lights	0.069***	-0.019	6,993
Share of land for herding	0.249***	0.154***	7,036
Ruggedness	0.197***	0.157***	6,993
Extended controls:			
Distance to capital (ln)	-0.247***	-0.082***	6,973
Distance to country border (ln)	0.114***	0.005	7,036
Distance to coastline (ln)	0.335***	0.053**	7,036
On or cross a major river	0.101***	0.018	7,036
Tsetse suitability index	-0.157***	-0.140***	7,036
Temperature (Mean)	-0.319***	-0.169***	6,996
Temperature (SD)	0.151***	0.063**	6,996
Precipitation (Mean)	-0.453***	-0.159***	7,029
Precipitation (SD)	-0.381***	-0.125***	7,029
Nomadic indicator	0.113*	0.229***	6,502
Semi-sedentary indicator	0.033	0.004	6,502
Former slavery	0.111**	0.011	6,141
Excluded from state power	0.027	-0.028	6,009
Ethnic segregation	0.210***	0.051*	7,013
Share of cropland	0.187***	0.034	7,036
Share of urban areas	0.029***	-0.007	7,036
Share of agnostics	0.083**	0.024	6,898
Share of Buddhists	0.066**	0.001	6,898
Share of Christians	-0.377***	-0.135***	6,898
Share of Hindus	0.152***	0.024	6,898
Share of Jews	0.014***	-0.000	6,898
Share of Muslims	0.272***	0.136***	6,898
Religious fractionalization	0.113***	0.028	6,898
Religious polarization	0.112***	0.027	6,898

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. Column (1) reports the raw correlation coefficients between herding and the covariates. Column (2) reports the partial correlation conditional on country fixed effects. Significance levels are computed based on standard errors clustered at the ethnicity level. *, **, and *** indicate significance at the 10, 5, and 1% levels.

Table A9: Traditional herding and contemporary conflict globally: More controls

	Dependent variable: Number of conflict events (arsinh) — all conflicts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	0.806	0.952	0.971	0.915	0.971	0.918	0.943	0.894
	(0.266)***	(0.287)***	(0.280)***	(0.269)***	(0.270)***	(0.266)***	(0.300)***	(0.278)***
	[0.329]	[0.358]	[0.347]	[0.339]	[0.320]	[0.333]	[0.322]	[0.304]
Distance to capital (ln)	-0.229						-0.227	-0.238
	(0.031)***						(0.036)***	(0.034)***
	[0.036]						[0.037]	[0.038]
Distance to country border (ln)	0.044						0.063	0.039
	(0.021)**						(0.023)***	(0.016)**
	[0.028]						[0.030]	[0.023]
Distance to coastline (ln)	-0.003						-0.027	
	(0.021)						(0.022)	
	[0.029]						[0.032]	
On or cross a major river	0.568						0.562	0.511
	(0.091)***						(0.097)***	(0.093)***
	[0.146]						[0.154]	[0.147]
Tsetse suitability index	-0.054						-0.068	-0.036
	(0.036)						(0.039)*	(0.035)
	[0.049]						[0.050]	[0.047]
Temperature (Mean)	0.016						0.014	0.016
	(0.007)**						(0.007)*	(0.007)**
	[0.008]						[0.007]	[0.008]
Temperature (SD)	-0.032						-0.199	-0.231
	(0.137)						(0.129)	(0.129)*
	[0.168]						[0.169]	[0.188]
Precipitation (Mean)	0.001						0.001	
	(0.000)*						(0.000)	
	[0.000]						[0.001]	
Precipitation (SD)	-0.004						-0.005	-0.004
	(0.002)*						(0.003)*	(0.002)*
	[0.003]						[0.004]	[0.003]
Nomadic indicator		0.263					0.139	
		(0.243)					(0.267)	
		[0.346]					[0.370]	
Semi-sedentary indicator		0.109					0.089	
		(0.170)					(0.186)	
		[0.225]					[0.240]	
Former slavery		-0.014					-0.045	
		(0.074)					(0.077)	
		[0.071]					[0.076]	
Excluded from state power			0.164				0.176	0.183
			(0.064)**				(0.063)***	(0.060)***
			[0.061]				[0.071]	[0.063]
Ethnic segregation			0.768				1.000	1.039
			(0.304)**				(0.310)***	(0.301)***
			[0.449]				[0.449]	[0.436]
Share of cropland				-0.026			0.080	
				(0.115)			(0.133)	
				[0.135]			[0.158]	
Share of urban areas				-0.102			0.573	
				(0.915)			(0.849)	
				[1.061]			[0.931]	
Share of agnostics					-0.167		-0.006	
					(0.111)		(0.189)	
					[0.081]		[0.116]	
Share of Buddhists					-0.659		-0.668	-0.749
					(0.410)		(0.313)**	(0.338)**
					[0.508]		[0.361]	[0.403]
Share of Christians					0.323		0.229	
					(0.198)		(0.181)	
					[0.206]		[0.179]	
Share of Hindus					-1.067		-1.353	-1.655
					(0.359)***		(0.363)***	(0.328)***
					[0.231]		[0.226]	[0.296]
Share of Jews					6.819		5.275	4.849
					(0.747)***		(0.861)***	(0.870)***
					[0.252]		[0.266]	[0.204]
Share of Muslims					0.330		0.300	
					(0.191)*		(0.169)*	
					[0.229]		[0.175]	
Religious fractionalization						0.087	0.112	0.009
						(0.116)	(0.132)	(0.003)***
						[0.121]	[0.139]	[0.004]
Religious polarization						-0.148	-0.206	
						(0.233)	(0.264)	
						[0.241]	[0.277]	
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.085	0.10	0.099	0.097	0.10	0.097	0.096	0.092
Oster δ	3.99	4.40	4.57	4.38	5.34	4.58	4.59	4.43
Mean of dependent var	0.64	0.62	0.72	0.63	0.64	0.64	0.70	0.72
SD of dependent var	1.46	1.44	1.55	1.46	1.46	1.46	1.53	1.55
Adj. R-squared	0.36	0.33	0.34	0.32	0.33	0.33	0.40	0.39
Number of Obs.	6,189	5,835	5,307	6,239	6,189	6,189	4,952	5,288
Number of Countries	202	209	162	211	209	209	160	161
Number of Clusters	980	903	939	985	982	982	861	939

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A10: Traditional herding and contemporary conflict globally: More controls

	Dependent variable: Number of conflict events (arsinh) — civil conflicts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	0.641	0.786	0.793	0.741	0.776	0.744	0.750	0.687
	(0.236)***	(0.252)***	(0.248)***	(0.235)***	(0.235)***	(0.233)***	(0.271)***	(0.252)***
	[0.279]	[0.307]	[0.299]	[0.284]	[0.267]	[0.281]	[0.290]	[0.273]
Distance to capital (ln)	-0.210						-0.205	-0.220
	(0.029)***						(0.034)***	(0.032)***
	[0.034]						[0.035]	[0.036]
Distance to country border (ln)	0.038						0.054	0.031
	(0.017)**						(0.019)***	(0.014)**
	[0.026]						[0.025]	[0.019]
Distance to coastline (ln)	-0.008						-0.029	
	(0.018)						(0.020)	
	[0.027]						[0.029]	
On or cross a major river	0.485						0.491	0.447
	(0.083)***						(0.088)***	(0.085)***
	[0.127]						[0.133]	[0.130]
Tsetse suitability index	-0.061						-0.066	-0.041
	(0.030)**						(0.034)*	(0.030)
	[0.040]						[0.042]	[0.037]
Temperature (Mean)	0.013						0.011	0.012
	(0.006)**						(0.006)*	(0.006)**
	[0.007]						[0.007]	[0.007]
Temperature (SD)	-0.065						-0.197	-0.217
	(0.116)						(0.117)*	(0.118)*
	[0.130]						[0.182]	[0.195]
Precipitation (Mean)	0.001						0.001	
	(0.000)**						(0.000)**	
	[0.000]						[0.000]	
Precipitation (SD)	-0.004						-0.005	-0.003
	(0.002)**						(0.002)**	(0.002)
	[0.003]						[0.003]	[0.003]
Nomadic indicator		0.262					0.142	
		(0.217)					(0.240)	
		[0.301]					[0.324]	
Semi-sedentary indicator		0.143					0.118	
		(0.153)					(0.167)	
		[0.195]					[0.210]	
Former slavery		0.026					-0.000	
		(0.066)					(0.070)	
		[0.062]					[0.066]	
Excluded from state power			0.171				0.185	0.200
			(0.059)***				(0.059)***	(0.057)***
			[0.061]				[0.071]	[0.064]
Ethnic segregation			0.659				0.851	0.856
			(0.284)**				(0.286)***	(0.281)***
			[0.387]				[0.405]	[0.394]
Share of cropland				-0.006			0.121	
				(0.095)			(0.110)	
				[0.102]			[0.125]	
Share of urban areas				-0.201			0.444	
				(0.839)			(0.766)	
				[0.966]			[0.822]	
Share of agnostics					-0.171		-0.030	
					(0.101)*		(0.166)	
					[0.070]		[0.092]	
Share of Buddhists					-0.609		-0.649	-0.663
					(0.399)		(0.322)**	(0.334)**
					[0.469]		[0.351]	[0.348]
Share of Christians					0.252		0.115	
					(0.168)		(0.158)	
					[0.159]		[0.144]	
Share of Hindus					-0.857		-1.134	-1.336
					(0.338)**		(0.349)***	(0.327)***
					[0.224]		[0.235]	[0.269]
Share of Jews					6.217		4.785	4.534
					(0.727)***		(0.900)***	(0.901)***
					[0.201]		[0.232]	[0.230]
Share of Muslims					0.299		0.218	0.112
					(0.163)*		(0.149)	(0.093)
					[0.178]		[0.145]	[0.155]
Religious fractionalization						0.066	0.087	0.008
						(0.106)	(0.117)	(0.003)***
						[0.097]	[0.110]	[0.003]
Religious polarization						-0.110	-0.157	
						(0.213)	(0.234)	
						[0.193]	[0.220]	
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.075	0.092	0.090	0.087	0.091	0.087	0.084	0.078
Oster δ	3.72	4.33	4.55	4.34	5.01	4.53	4.09	3.72
Mean of dependent var	0.51	0.50	0.58	0.51	0.51	0.51	0.57	0.59
SD of dependent var	1.31	1.30	1.40	1.31	1.32	1.32	1.39	1.40
Adj. R-squared	0.36	0.33	0.34	0.32	0.33	0.33	0.40	0.39
Number of Obs.	6,189	5,835	5,307	6,239	6,189	6,189	4,952	5,288
Number of Countries	202	209	162	211	209	209	160	161
Number of Clusters	980	903	939	985	982	982	861	939

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A11: Traditional herding and contemporary conflict globally: More controls

	Dependent variable: Number of conflict events (arsinh) — non-civil conflicts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	0.708	0.832	0.830	0.787	0.828	0.791	0.827	0.833
	(0.201)***	(0.220)***	(0.219)***	(0.207)***	(0.210)***	(0.206)***	(0.231)***	(0.228)***
	[0.251]	[0.263]	[0.258]	[0.256]	[0.257]	[0.254]	[0.245]	[0.240]
Distance to capital (ln)	-0.142						-0.151	-0.152
	(0.024)***						(0.028)***	(0.027)***
	[0.028]						[0.029]	[0.030]
Distance to country border (ln)	0.024						0.034	0.031
	(0.015)						(0.017)*	(0.012)***
	[0.019]						[0.021]	[0.015]
Distance to coastline (ln)	0.006						-0.004	
	(0.015)						(0.016)	
	[0.019]						[0.022]	
On or cross a major river	0.384						0.380	0.375
	(0.071)***						(0.077)***	(0.077)***
	[0.108]						[0.114]	[0.113]
Tsetse suitability index	-0.039						-0.055	-0.052
	(0.029)						(0.033)*	(0.032)
	[0.037]						[0.038]	[0.037]
Temperature (Mean)	0.013						0.010	0.010
	(0.005)**						(0.005)*	(0.005)*
	[0.006]						[0.005]	[0.005]
Temperature (SD)	-0.043						-0.148	-0.154
	(0.101)						(0.095)	(0.096)
	[0.127]						[0.117]	[0.117]
Precipitation (Mean)	0.000						0.000	
	(0.000)						(0.000)	
	[0.000]						[0.000]	
Precipitation (SD)	-0.002						-0.003	-0.003
	(0.002)						(0.002)	(0.002)
	[0.003]						[0.003]	[0.003]
Nomadic indicator		0.217					0.156	0.099
		(0.177)					(0.198)	(0.120)
		[0.243]					[0.263]	[0.134]
Semi-sedentary indicator		0.062					0.059	
		(0.126)					(0.139)	
		[0.155]					[0.161]	
Former slavery		-0.047					-0.064	-0.066
		(0.052)					(0.055)	(0.055)
		[0.049]					[0.055]	[0.054]
Excluded from state power			0.071				0.067	0.071
			(0.043)				(0.043)	(0.042)*
			[0.043]				[0.048]	[0.043]
Ethnic segregation			0.475				0.593	0.599
			(0.205)**				(0.210)***	(0.211)***
			[0.309]				[0.295]	[0.306]
Share of cropland				-0.016			-0.011	
				(0.089)			(0.103)	
				[0.116]			[0.129]	
Share of urban areas				-0.249			-0.041	
				(0.664)			(0.616)	
				[0.643]			[0.579]	
Share of agnostics					-0.075		0.054	
					(0.076)		(0.126)	
					[0.062]		[0.089]	
Share of Buddhists					-0.456		-0.391	-0.445
					(0.259)*		(0.204)*	(0.211)**
					[0.399]		[0.271]	[0.295]
Share of Christians					0.165		0.145	
					(0.157)		(0.146)	
					[0.178]		[0.157]	
Share of Hindus					-0.741		-0.880	-1.011
					(0.298)**		(0.292)***	(0.262)***
					[0.166]		[0.165]	[0.192]
Share of Jews					6.839		6.182	5.972
					(0.180)***		(0.230)***	(0.175)***
					[0.212]		[0.238]	[0.161]
Share of Muslims					0.166		0.170	
					(0.154)		(0.140)	
					[0.197]		[0.156]	
Religious fractionalization						0.060	0.083	0.006
						(0.076)	(0.092)	(0.003)**
						[0.092]	[0.107]	[0.003]
Religious polarization						-0.104	-0.155	
						(0.152)	(0.185)	
						[0.184]	[0.216]	
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.10	0.12	0.12	0.11	0.12	0.12	0.12	0.12
Oster δ	4.84	4.79	4.86	4.80	6.18	5.13	5.33	5.60
Mean of dependent var	0.36	0.35	0.41	0.36	0.36	0.36	0.40	0.40
SD of dependent var	1.06	1.04	1.12	1.06	1.06	1.06	1.11	1.11
Adj. R-squared	0.29	0.27	0.27	0.26	0.27	0.26	0.33	0.33
Number of Obs.	6,189	5,835	5,307	6,239	6,189	6,189	4,952	4,952
Number of Countries	202	209	162	211	209	209	160	160
Number of Clusters	980	903	939	985	982	982	861	861

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A12: Other pre-colonial ethnic features and contemporary conflict globally

	Dependent variable: Number of conflict events (arsinh) — all conflicts				
	Specification A		Specification B		
	Additional variable	Obs.	Additional variable	Herding	Obs.
	(1)	(2)	(3)	(4)	(5)
Herding	0.101	7036			
	(0.032)***				
Jurisd. hierarchy beyond local, 1-5	0.094	6319	0.080	0.104	6319
	(0.024)***		(0.023)***	(0.031)***	
Political centralization, 0/1	0.085	6319	0.073	0.107	6319
	(0.022)***		(0.021)***	(0.031)***	
Jurisd. hierarchy local, 1-3	-0.010	6385	-0.008	0.117	6385
	(0.021)		(0.021)	(0.033)***	
Headman elected, 0/1	0.050	5283	0.040	0.099	5283
	(0.022)**		(0.024)	(0.039)**	
Property rights in land, 0/1	0.024	5003	0.025	0.123	5003
	(0.024)		(0.024)	(0.034)***	
Single inheritor for land, 0/1	-0.034	4828	-0.037	0.128	4828
	(0.022)		(0.023)	(0.034)***	
Institutional characteristics (PCA)	0.012	7038	-0.001	0.102	7036
	(0.017)		(0.017)	(0.031)***	
Patrilineality, 0/1	-0.011	6958	-0.013	0.108	6956
	(0.017)		(0.017)	(0.033)***	
Matrilineality, 0/1	-0.021	6958	-0.021	0.108	6956
	(0.016)		(0.017)	(0.033)***	
Patrilocality, 0/1	-0.009	6935	-0.017	0.106	6933
	(0.018)		(0.018)	(0.032)***	
Matrilocality, 0/1	0.001	6935	0.001	0.105	6933
	(0.011)		(0.012)	(0.032)***	
Polygyny, 0/1	-0.024	6815	-0.030	0.115	6813
	(0.020)		(0.021)	(0.031)***	
Clan communities, 0/1	-0.013	6290	-0.011	0.132	6288
	(0.018)		(0.017)	(0.034)***	
Kinship tightness, 0-1	-0.003	6890	0.002	0.114	6888
	(0.015)		(0.015)	(0.032)***	
Cousin marriage, 0/1	-0.010	5951	-0.010	0.108	5949
	(0.020)		(0.020)	(0.037)***	
Bride price, 0/1	0.045	6901	0.036	0.096	6899
	(0.016)***		(0.018)**	(0.032)***	
Female particip. in agriculture, 1-6	-0.073	5115	-0.064	0.089	5115
	(0.021)***		(0.021)***	(0.037)**	
Settlement complexity, 1-8	0.005	6502	0.027	0.139	6502
	(0.022)		(0.021)	(0.032)***	
Historical latitude (abs.)	0.090	7038	0.052	0.095	7036
	(0.067)		(0.064)	(0.030)***	
Nomadic, 0/1	0.029	6502	0.002	0.132	6502
	(0.023)		(0.022)	(0.032)***	
Semi-sedentary, 0/1	-0.015	6502	-0.015	0.133	6502
	(0.018)		(0.019)	(0.032)***	
Former slavery, 0/1	0.003	6143	0.002	0.131	6141
	(0.022)		(0.023)	(0.033)***	
High Gods Moral, 0/1	0.120	4376	0.081	0.124	4376
	(0.037)***		(0.036)**	(0.042)***	

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. In specification A (in columns (1)-(2)) we regress conflict on various ethnic traits from Murdock (1967). In specification B (columns (3)-(5)) we regress conflict on each of Murdock's additional variables and ancestral dependence on herding. Both specifications include country fixed effects. Standardized beta coefficients are reported with standard errors in parentheses clustered at the ethnicity level.

Table A13: Correlation coefficients between herding and the covariates in Africa

Variable Name	Raw	Within country	Obs.
	(1)	(2)	(3)
Baseline controls:			
Settlement complexity	-0.521***	-0.434***	2,200
Jurisdictional hierarchy	0.176***	0.069	2,144
Historical latitude (abs.)	0.272***	0.256***	2,286
Population density (ln)	-0.019	-0.087***	2,277
Ethnic fractionalization	-0.223***	-0.098***	2,286
Ethnic polarization	0.185***	0.020	2,286
Nighttime lights	-0.004	-0.054***	2,280
Share of land for herding	0.262***	0.117***	2,286
Ruggedness	0.146***	0.071**	2,280
Extended controls:			
Distance to capital (ln)	-0.112***	-0.012	2,278
Distance to country border (ln)	0.002	-0.027	2,286
Distance to coastline (ln)	0.069*	0.107***	2,286
On or cross a major river	0.018	0.045	2,286
Tsetse suitability index	-0.432***	-0.291***	2,286
Temperature (Mean)	0.033	0.044	2,285
Temperature (SD)	0.147***	0.198***	2,285
Precipitation (Mean)	-0.400***	-0.248***	2,285
Precipitation (SD)	-0.223***	-0.199***	2,285
Nomadic indicator	0.552***	0.478***	2,200
Semi-sedentary indicator	0.058	0.080*	2,200
Former slavery	-0.082	-0.086*	2,017
Excluded from state power	0.063*	0.015	1,904
Ethnic segregation	0.179***	0.037	2,284
Share of cropland	0.083**	0.065*	2,286
Share of urban areas	0.003	-0.025**	2,286
Share of Christians	-0.168***	-0.089*	2,276
Share of Muslims	0.182***	0.085**	2,276
Religious fractionalization	0.055*	0.035	2,276
Religious polarization	0.055*	0.035	2,276

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. Column (1) reports the raw correlation coefficients between herding and the covariates. Column (2) reports the partial correlation conditional on country fixed effects. Significance levels are computed based on standard errors clustered at the ethnicity level. *, **, and *** indicate significance at the 10, 5, and 1% levels.

Table A14: Traditional herding and contemporary conflict in Africa: More controls

	Dependent variable: Number of conflict events (arsinh) — all conflicts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	1.768	1.697	2.010	1.974	1.923	1.939	1.564	1.638
	(0.559)***	(0.661)**	(0.553)***	(0.594)***	(0.602)***	(0.576)***	(0.560)***	(0.534)***
	[0.465]	[0.637]	[0.504]	[0.493]	[0.500]	[0.480]	[0.585]	[0.467]
Distance to capital (ln)	-0.423						-0.408	-0.393
	(0.045)***						(0.049)***	(0.045)***
	[0.065]						[0.070]	[0.064]
Distance to country border (ln)	0.131						0.142	0.103
	(0.040)***						(0.045)***	(0.042)**
	[0.064]						[0.062]	[0.064]
Distance to coastline (ln)	-0.033						-0.020	
	(0.074)						(0.076)	
	[0.086]						[0.086]	
On or cross a major river	1.020						1.006	0.977
	(0.171)***						(0.185)***	(0.173)***
	[0.184]						[0.194]	[0.189]
Tsetse suitability index	-0.038						-0.133	
	(0.092)						(0.100)	
	[0.142]						[0.118]	
Temperature (Mean)	0.051						0.040	
	(0.023)**						(0.028)	
	[0.035]						[0.048]	
Temperature (SD)	-0.430						0.069	
	(0.595)						(0.675)	
	[0.941]						[0.840]	
Precipitation (Mean)	0.004						0.003	
	(0.002)						(0.003)	
	[0.002]						[0.003]	
Precipitation (SD)	-0.050						-0.046	-0.039
	(0.012)***						(0.014)***	(0.011)***
	[0.010]						[0.011]	[0.008]
Nomadic indicator		1.228					0.924	0.592
		(0.525)**					(0.507)*	(0.430)
		[0.560]					[0.512]	[0.339]
Semi-sedentary indicator		0.654					0.633	
		(0.509)					(0.475)	
		[0.465]					[0.460]	
Former slavery		0.017					-0.008	
		(0.124)					(0.127)	
		[0.105]					[0.110]	
Excluded from state power			0.368				0.340	0.353
			(0.129)***				(0.134)**	(0.122)***
			[0.144]				[0.155]	[0.135]
Ethnic segregation			5.063				4.338	4.347
			(1.117)***				(1.222)***	(1.157)***
			[1.129]				[1.230]	[1.249]
Share of cropland				-0.395			-0.407	-0.522
				(0.209)*			(0.281)	(0.220)**
				[0.253]			[0.289]	[0.235]
Share of urban areas				1.122			-1.489	
				(4.614)			(3.709)	
				[5.824]			[4.402]	
Share of Christians					0.163		-0.132	
					(0.282)		(0.266)	
					[0.250]		[0.259]	
Share of Muslims					-0.009		-0.030	
					(0.247)		(0.247)	
					[0.226]		[0.238]	
Religious fractionalization						0.152	0.123	0.015
						(0.101)	(0.045)***	(0.004)***
						[0.116]	[0.059]	[0.004]
Religious polarization						-0.264	-0.218	
						(0.204)	(0.093)**	
						[0.233]	[0.119]	
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.13	0.12	0.14	0.14	0.14	0.14	0.11	0.12
Oster δ	6.79	4.79	12.7	10.1	8.84	9.63	4.43	5.13
Mean of dependent var	1.66	1.69	1.86	1.65	1.65	1.65	1.90	1.86
SD of dependent var	2.08	2.08	2.15	2.08	2.08	2.08	2.15	2.15
Adj. R-squared	0.42	0.32	0.36	0.33	0.33	0.34	0.44	0.45
Number of Obs.	2,131	1,894	1,781	2,134	2,133	2,133	1,593	1,779
Number of Countries	55	56	52	57	57	57	51	52
Number of Clusters	450	397	440	450	450	450	389	440

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A15: Traditional herding and contemporary conflict in Africa: More controls

	Dependent variable: Number of conflict events (arsinh) — civil conflicts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	1.503	1.520	1.795	1.760	1.727	1.749	1.293	1.373
	(0.492)***	(0.585)***	(0.511)***	(0.523)***	(0.521)***	(0.509)***	(0.531)**	(0.511)***
	[0.428]	[0.569]	[0.510]	[0.461]	[0.465]	[0.459]	[0.527]	[0.457]
Distance to capital (ln)	-0.383						-0.380	-0.353
	(0.044)***						(0.047)***	(0.044)***
	[0.064]						[0.067]	[0.062]
Distance to country border (ln)	0.078						0.083	0.058
	(0.035)**						(0.040)**	(0.037)
	[0.058]						[0.052]	[0.054]
Distance to coastline (ln)	0.004						0.019	
	(0.065)						(0.070)	
	[0.082]						[0.080]	
On or cross a major river	0.826						0.817	0.811
	(0.157)***						(0.173)***	(0.161)***
	[0.162]						[0.178]	[0.157]
Tsetse suitability index	-0.047						-0.103	
	(0.084)						(0.094)	
	[0.129]						[0.110]	
Temperature (Mean)	0.052						0.041	
	(0.021)**						(0.026)	
	[0.033]						[0.047]	
Temperature (SD)	0.074						0.396	
	(0.487)						(0.577)	
	[0.713]						[0.653]	
Precipitation (Mean)	0.004						0.003	
	(0.002)*						(0.002)	
	[0.002]						[0.003]	
Precipitation (SD)	-0.049						-0.047	-0.037
	(0.011)***						(0.013)***	(0.010)***
	[0.010]						[0.011]	[0.007]
Nomadic indicator		1.078					0.838	0.506
		(0.479)**					(0.469)*	(0.429)
		[0.503]					[0.487]	[0.345]
Semi-sedentary indicator		0.731					0.716	
		(0.459)					(0.458)	
		[0.447]					[0.446]	
Former slavery		-0.075					-0.109	
		(0.109)					(0.115)	
		[0.103]					[0.106]	
Excluded from state power			0.327				0.362	0.357
			(0.123)***				(0.126)***	(0.119)***
			[0.152]				[0.159]	[0.142]
Ethnic segregation			3.514				2.944	3.262
			(1.114)***				(1.224)**	(1.164)***
			[1.103]				[1.156]	[1.165]
Share of cropland				-0.249			-0.358	
				(0.183)			(0.242)	
				[0.250]			[0.290]	
Share of urban areas				1.591			-0.967	
				(4.098)			(3.405)	
				[4.873]			[3.906]	
Share of Christians					0.048		-0.292	
					(0.233)		(0.224)	
					[0.210]		[0.210]	
Share of Muslims					0.050		-0.090	
					(0.205)		(0.211)	
					[0.198]		[0.199]	
Religious fractionalization						0.150	0.120	0.013
						(0.094)	(0.045)***	(0.004)***
						[0.107]	[0.058]	[0.004]
Religious polarization						-0.266	-0.215	
						(0.190)	(0.092)**	
						[0.215]	[0.116]	
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.12	0.12	0.14	0.14	0.14	0.14	0.10	0.11
Oster δ	4.25	3.32	6.17	5.26	4.91	5.48	2.93	3.33
Mean of dependent var	1.24	1.27	1.41	1.24	1.24	1.24	1.43	1.41
SD of dependent var	1.84	1.84	1.92	1.84	1.84	1.84	1.92	1.92
Adj. R-squared	0.41	0.32	0.35	0.33	0.33	0.34	0.43	0.43
Number of Obs.	2,131	1,894	1,781	2,134	2,133	2,133	1,593	1,779
Number of Countries	55	56	52	57	57	57	51	52
Number of Clusters	450	397	440	450	450	450	389	440

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A16: Traditional herding and contemporary conflict in Africa: More controls

	Dependent variable: Number of conflict events (arsinh) — non-civil conflicts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	1.478	1.428	1.682	1.640	1.596	1.601	1.346	1.351
	(0.452)***	(0.562)**	(0.464)***	(0.496)***	(0.510)***	(0.483)***	(0.451)***	(0.423)***
	[0.357]	[0.522]	[0.384]	[0.386]	[0.397]	[0.376]	[0.479]	[0.360]
Distance to capital (ln)	-0.433						-0.423	-0.409
	(0.044)***						(0.046)***	(0.043)***
	[0.061]						[0.066]	[0.061]
Distance to country border (ln)	0.128						0.141	0.118
	(0.034)***						(0.040)***	(0.037)***
	[0.054]						[0.058]	[0.059]
Distance to coastline (ln)	-0.035						-0.013	
	(0.065)						(0.070)	
	[0.072]						[0.078]	
On or cross a major river	0.874						0.917	0.867
	(0.151)***						(0.158)***	(0.149)***
	[0.180]						[0.199]	[0.187]
Tsetse suitability index	-0.058						-0.153	
	(0.079)						(0.088)*	
	[0.119]						[0.100]	
Temperature (Mean)	0.031						0.025	
	(0.019)						(0.024)	
	[0.032]						[0.043]	
Temperature (SD)	-0.438						-0.012	
	(0.520)						(0.620)	
	[0.850]						[0.832]	
Precipitation (Mean)	0.003						0.003	
	(0.002)						(0.002)	
	[0.002]						[0.003]	
Precipitation (SD)	-0.039						-0.037	-0.030
	(0.010)***						(0.011)***	(0.009)***
	[0.011]						[0.012]	[0.008]
Nomadic indicator		0.966					0.734	0.570
		(0.462)**					(0.434)*	(0.363)
		[0.505]					[0.458]	[0.313]
Semi-sedentary indicator		0.214					0.217	
		(0.471)					(0.427)	
		[0.413]					[0.393]	
Former slavery		0.047					0.014	
		(0.106)					(0.108)	
		[0.088]					[0.094]	
Excluded from state power			0.272				0.187	0.245
			(0.107)**				(0.114)	(0.102)**
			[0.107]				[0.117]	[0.117]
Ethnic segregation			4.739				4.066	4.112
			(0.914)***				(0.970)***	(0.902)***
			[0.855]				[1.065]	[1.020]
Share of cropland				-0.356			-0.344	-0.421
				(0.174)**			(0.246)	(0.186)**
				[0.188]			[0.239]	[0.184]
Share of urban areas				1.298			-1.588	
				(4.458)			(3.520)	
				[5.558]			[4.060]	
Share of Christians					0.250		-0.038	
					(0.247)		(0.232)	
					[0.214]		[0.210]	
Share of Muslims					-0.055		-0.067	
					(0.211)		(0.209)	
					[0.179]		[0.183]	
Religious fractionalization						0.122	0.084	0.010
						(0.094)	(0.038)**	(0.004)**
						[0.101]	[0.044]	[0.003]
Religious polarization						-0.211	-0.149	
						(0.188)	(0.079)*	
						[0.203]	[0.090]	
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.12	0.12	0.14	0.14	0.13	0.13	0.11	0.11
Oster δ	7.46	4.97	13.7	11.4	10.0	10.4	4.58	5.18
Mean of dependent var	1.21	1.25	1.37	1.21	1.21	1.21	1.41	1.37
SD of dependent var	1.78	1.80	1.86	1.78	1.78	1.78	1.88	1.86
Adj. R-squared	0.41	0.30	0.34	0.31	0.31	0.31	0.44	0.45
Number of Obs.	2,131	1,894	1,781	2,134	2,133	2,133	1,593	1,779
Number of Countries	55	56	52	57	57	57	51	52
Number of Clusters	450	397	440	450	450	450	389	440

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A17: Traditional herding and contemporary conflict in Africa: More controls

	Dependent variable: Number of conflict events (arsinh) — localized conflicts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	1.223	1.225	1.423	1.343	1.292	1.601	1.224	1.176
	(0.381)***	(0.502)**	(0.415)***	(0.437)***	(0.453)***	(0.483)***	(0.390)***	(0.365)***
	[0.302]	[0.482]	[0.344]	[0.351]	[0.361]	[0.376]	[0.432]	[0.324]
Distance to capital (ln)	-0.458						-0.450	-0.435
	(0.040)***						(0.042)***	(0.040)***
	[0.053]						[0.057]	[0.052]
Distance to country border (ln)	0.114						0.130	0.118
	(0.028)***						(0.034)***	(0.031)***
	[0.046]						[0.050]	[0.050]
Distance to coastline (ln)	-0.021						-0.001	
	(0.057)						(0.061)	
	[0.064]						[0.071]	
On or cross a major river	0.874						0.942	0.897
	(0.137)***						(0.145)***	(0.137)***
	[0.176]						[0.200]	[0.176]
Tsetse suitability index	-0.034						-0.113	
	(0.065)						(0.075)	
	[0.100]						[0.088]	
Temperature (Mean)	0.023						0.023	
	(0.016)						(0.019)	
	[0.024]						[0.031]	
Temperature (SD)	-0.588						-0.299	-0.557
	(0.405)						(0.500)	(0.411)
	[0.466]						[0.541]	[0.532]
Precipitation (Mean)	0.003						0.003	
	(0.002)						(0.002)	
	[0.002]						[0.003]	
Precipitation (SD)	-0.030						-0.030	-0.024
	(0.009)***						(0.010)***	(0.008)***
	[0.010]						[0.011]	[0.009]
Nomadic indicator		0.787					0.627	0.503
		(0.408)*					(0.369)*	(0.320)
		[0.464]					[0.412]	[0.300]
Semi-sedentary indicator		0.042					0.119	
		(0.440)					(0.393)	
		[0.403]					[0.387]	
Former slavery		0.077					0.037	
		(0.089)					(0.087)	
		[0.090]					[0.090]	
Excluded from state power			0.205				0.121	0.162
			(0.102)**				(0.100)	(0.092)*
			[0.098]				[0.095]	[0.096]
Ethnic segregation			3.807				3.269	3.308
			(0.782)***				(0.797)***	(0.718)***
			[0.733]				[0.864]	[0.776]
Share of cropland				-0.383			-0.321	-0.343
				(0.143)***			(0.205)	(0.157)**
				[0.162]			[0.215]	[0.169]
Share of urban areas				2.130			-0.715	
				(4.217)			(3.268)	
				[5.114]			[3.637]	
Share of Christians					0.332		0.027	
					(0.213)		(0.184)	
					[0.174]		[0.151]	
Share of Muslims					0.034		-0.000	
					(0.184)		(0.176)	
					[0.124]		[0.148]	
Religious fractionalization						0.122	0.096	0.008
						(0.094)	(0.035)***	(0.004)**
						[0.101]	[0.040]	[0.003]
Religious polarization						-0.211	-0.176	
						(0.188)	(0.073)**	
						[0.203]	[0.082]	
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.11	0.11	0.13	0.12	0.12	0.13	0.11	0.11
Oster δ	7.33	4.84	11.4	10.3	8.81	10.4	4.80	5.06
Mean of dependent var	0.93	0.96	1.06	0.93	0.93	1.21	1.09	1.06
SD of dependent var	1.58	1.60	1.67	1.58	1.58	1.78	1.68	1.67
Adj. R-squared	0.45	0.30	0.34	0.31	0.31	0.31	0.47	0.48
Number of Obs.	2,131	1,894	1,781	2,134	2,133	2,133	1,593	1,779
Number of Countries	55	56	52	57	57	57	51	52
Number of Clusters	450	397	440	450	450	450	389	440

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A18: Other pre-colonial ethnic features and contemporary conflict in Africa

	Dependent variable: Number of conflict events (arsinh) — all conflicts				
	Specification A		Specification B		
	Additional variable (1)	Obs. (2)	Additional variable	Herding	Obs.
Herding	0.124	2286			
	(0.037)***				
Jurisd. hierarchy beyond local, 1-5	0.104	2144	0.096	0.118	2144
	(0.029)***		(0.028)***	(0.040)***	
Political centralization, 0/1	0.105	2144	0.098	0.118	2144
	(0.029)***		(0.029)***	(0.039)***	
Jurisd. hierarchy local, 1-3	-0.004	2150	0.015	0.129	2150
	(0.030)		(0.029)	(0.041)***	
Headman elected, 0/1	0.090	1702	0.092	0.116	1702
	(0.031)***		(0.028)***	(0.038)***	
Property rights in land, 0/1	-0.007	1822	0.007	0.108	1822
	(0.026)		(0.024)	(0.041)***	
Single inheritor for land, 0/1	0.004	1768	0.006	0.113	1768
	(0.031)		(0.032)	(0.043)***	
Institutional characteristics (PCA)	-0.013	2286	-0.007	0.124	2286
	(0.028)		(0.027)	(0.037)***	
Patrilineality, 0/1	0.025	2234	0.017	0.149	2234
	(0.030)		(0.031)	(0.033)***	
Matrilineality, 0/1	-0.035	2234	-0.026	0.148	2234
	(0.033)		(0.035)	(0.033)***	
Patrilocality, 0/1	0.006	2266	-0.008	0.135	2266
	(0.032)		(0.033)	(0.039)***	
Matrilocality, 0/1	0.015	2266	0.023	0.136	2266
	(0.019)		(0.019)	(0.039)***	
Polygyny, 0/1	0.023	2247	0.027	0.128	2247
	(0.029)		(0.030)	(0.037)***	
Clan communities, 0/1	-0.029	1918	-0.021	0.144	1918
	(0.029)		(0.028)	(0.043)***	
Kinship tightness, 0-1	-0.022	2259	-0.011	0.136	2259
	(0.025)		(0.026)	(0.039)***	
Cousin marriage, 0/1	-0.020	1711	-0.019	0.176	1711
	(0.037)		(0.036)	(0.035)***	
Bride price, 0/1	0.045	2285	0.027	0.119	2285
	(0.024)*		(0.025)	(0.038)***	
Female particip. in agriculture, 1-6	0.011	1478	0.020	0.089	1478
	(0.040)		(0.040)	(0.038)**	
Settlement complexity, 1-8	-0.023	2200	0.040	0.152	2200
	(0.035)		(0.033)	(0.038)***	
Historical latitude (abs.)	0.045	2286	-0.004	0.125	2286
	(0.040)		(0.041)	(0.038)***	
Nomadic, 0/1	0.076	2200	0.022	0.122	2200
	(0.039)**		(0.039)	(0.039)***	
Semi-sedentary, 0/1	0.017	2200	0.007	0.133	2200
	(0.034)		(0.031)	(0.039)***	
Former slavery, 0/1	0.006	2017	0.017	0.136	2017
	(0.031)		(0.030)	(0.040)***	
High Gods Moral, 0/1	0.112	1198	0.063	0.133	1198
	(0.051)**		(0.050)	(0.064)**	

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. In specification A (in columns (1)-(2)) we regress conflict on various ethnic traits from Murdock (1967). In specification B (columns (3)-(5)) we regress conflict on each of Murdock's additional variables and ancestral dependence on herding. Both specifications include country fixed effects. Standardized beta coefficients are reported with standard errors in parentheses clustered at the ethnicity level.

Table A19: Traditional herding, ethnic fractionalization and contemporary conflict globally: Interaction with previous conflicts

	Dependent variable: Number of conflict events (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	-0.010	-0.011	-0.015	-0.012	0.017	0.011
	(0.029)	(0.025)	(0.025)	(0.022)	(0.016)	(0.015)
	[0.036]	[0.036]	[0.031]	[0.031]	[0.018]	[0.020]
Ethnic fractionalization	0.006	0.001	0.004	-0.006	-0.006	0.001
	(0.016)	(0.019)	(0.016)	(0.018)	(0.007)	(0.008)
	[0.029]	[0.025]	[0.028]	[0.023]	[0.011]	[0.011]
Herding × Previous Conflict (1y)	1.481	1.575	1.632	1.698	0.678	0.812
	(0.220)***	(0.234)***	(0.227)***	(0.245)***	(0.189)***	(0.189)***
	[0.231]	[0.276]	[0.236]	[0.292]	[0.279]	[0.284]
Fractionalization × Previous Conflict (1y)	-0.883	-0.942	-0.763	-0.799	-0.743	-0.787
	(0.353)**	(0.348)***	(0.292)***	(0.286)***	(0.345)**	(0.343)**
	[0.239]	[0.242]	[0.296]	[0.296]	[0.165]	[0.189]
Previous conflict indicator (1y)	1.755	1.742	1.568	1.545	1.544	1.537
	(0.294)***	(0.293)***	(0.245)***	(0.246)***	(0.295)***	(0.296)***
	[0.204]	[0.206]	[0.245]	[0.244]	[0.151]	[0.171]
Settlement complexity		0.002		0.002		0.001
		(0.003)		(0.003)		(0.001)
		[0.003]		[0.003]		[0.001]
Jurisdictional hierarchy		0.017		0.013		0.008
		(0.004)***		(0.003)***		(0.002)***
		[0.005]		[0.004]		[0.002]
Historical latitude (abs.)		1.455		0.980		1.143
		(1.208)		(1.083)		(0.579)**
		[0.001]		[0.001]		[0.001]
Population density (ln)		0.009		0.008		0.004
		(0.002)***		(0.002)***		(0.001)***
		[0.003]		[0.003]		[0.001]
Ethnic polarization		-0.081		-0.003		-0.073
		(0.112)		(0.082)		(0.056)
		[0.115]		[0.104]		[0.054]
Nighttime lights		-0.003		-0.003		-0.001
		(0.001)***		(0.001)***		(0.000)*
		[0.001]		[0.001]		[0.000]
Share of land for herding		0.001		-0.000		0.001
		(0.014)		(0.012)		(0.007)
		[0.016]		[0.014]		[0.009]
Ruggedness		-0.093		-0.077		-0.042
		(0.030)***		(0.027)***		(0.015)***
		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent var	0.092	0.092	0.072	0.072	0.039	0.040
SD of dependent var	0.50	0.51	0.45	0.45	0.31	0.31
Adj. R-squared	0.42	0.42	0.41	0.41	0.34	0.35
Number of Obs.	196,980	174,692	196,980	174,692	196,980	174,692
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a within-country language group from the *Ethnologue* and a year. The dependent variables are based on information from the *Uppsala Conflict Data Program* (UCDP) about conflict events around the globe for each year during the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000.

Table A20: Traditional herding, ethnic polarization and contemporary conflict globally: Interaction with previous conflicts

	Dependent variable: Number of conflict events (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	0.007	-0.003	-0.002	-0.005	0.024	0.013
	(0.035)	(0.025)	(0.029)	(0.022)	(0.019)	(0.014)
	[0.036]	[0.035]	[0.032]	[0.030]	[0.019]	[0.019]
Ethnic polarization	-0.110	-0.191	-0.075	-0.131	-0.044	-0.103
	(0.079)	(0.103)*	(0.064)	(0.082)	(0.043)	(0.057)*
	[0.085]	[0.102]	[0.077]	[0.087]	[0.040]	[0.053]
Herding × Previous Conflict (1y)	1.478	1.566	1.617	1.661	0.738	0.879
	(0.229)***	(0.249)***	(0.236)***	(0.259)***	(0.198)***	(0.208)***
	[0.226]	[0.270]	[0.231]	[0.286]	[0.294]	[0.297]
Polarization × Previous Conflict (1y)	2.798	2.856	3.920	4.082	0.921	1.035
	(1.106)**	(1.190)**	(1.121)***	(1.199)***	(1.079)	(1.154)
	[1.387]	[1.375]	[1.558]	[1.554]	[1.164]	[1.196]
Previous conflict indicator (1y)	0.750	0.688	0.517	0.455	0.850	0.795
	(0.130)***	(0.131)***	(0.132)***	(0.133)***	(0.124)***	(0.125)***
	[0.135]	[0.137]	[0.158]	[0.159]	[0.130]	[0.129]
Settlement complexity		0.002		0.002		0.001
		(0.003)		(0.003)		(0.001)
		[0.003]		[0.003]		[0.001]
Jurisdictional hierarchy		0.018		0.014		0.009
		(0.004)***		(0.003)***		(0.002)***
		[0.005]		[0.004]		[0.002]
Historical latitude (abs.)		1.883		1.317		1.386
		(1.547)		(1.335)		(0.784)*
		[0.001]		[0.001]		[0.001]
Population density (ln)		0.010		0.008		0.004
		(0.002)***		(0.002)***		(0.001)***
		[0.003]		[0.003]		[0.001]
Ethnic fractionalization		-0.038		-0.030		-0.018
		(0.032)		(0.026)		(0.015)
		[0.033]		[0.030]		[0.015]
Nighttime lights		-0.003		-0.003		-0.001
		(0.001)***		(0.001)***		(0.000)**
		[0.001]		[0.001]		[0.000]
Share of land for herding		0.001		-0.002		-0.000
		(0.013)		(0.012)		(0.007)
		[0.017]		[0.014]		[0.009]
Ruggedness		-0.093		-0.076		-0.044
		(0.030)***		(0.027)***		(0.016)***
		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent var	0.092	0.092	0.072	0.072	0.039	0.040
SD of dependent var	0.50	0.51	0.45	0.45	0.31	0.31
Adj. R-squared	0.42	0.42	0.41	0.42	0.34	0.34
Number of Obs.	196,980	174,692	196,980	174,692	196,980	174,692
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a within-country language group from the *Ethnologue* and a year. The dependent variables are based on information from the *Uppsala Conflict Data Program* (UCDP) about conflict events around the globe for each year during the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000.

Table A21: Traditional herding and contemporary conflict in Africa: Interaction with previous conflicts

	Dependent variable: Number of conflict events (arsinh)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	0.129	0.129	0.128	0.120	0.101	0.109	0.056	0.061
	(0.064)**	(0.085)	(0.049)***	(0.061)**	(0.048)**	(0.066)	(0.037)	(0.054)
	[0.054]	[0.069]	[0.045]	[0.057]	[0.039]	[0.048]	[0.032]	[0.039]
Herding × Previous conflict (1y)	1.387	1.494	1.427	1.500	0.968	1.060	1.096	1.143
	(0.298)***	(0.304)***	(0.345)***	(0.354)***	(0.237)***	(0.244)***	(0.243)***	(0.247)***
	[0.377]	[0.394]	[0.423]	[0.430]	[0.360]	[0.397]	[0.360]	[0.396]
Previous conflict indicator (1y)	1.140	1.063	0.971	0.909	1.012	0.951	0.882	0.838
	(0.084)***	(0.086)***	(0.090)***	(0.095)***	(0.077)***	(0.080)***	(0.078)***	(0.081)***
	[0.085]	[0.080]	[0.094]	[0.084]	[0.078]	[0.088]	[0.070]	[0.087]
Settlement complexity		-0.006		-0.007		-0.002		-0.002
		(0.011)		(0.009)		(0.008)		(0.006)
		[0.011]		[0.009]		[0.007]		[0.006]
Jurisdictional hierarchy		0.048		0.035		0.037		0.027
		(0.014)***		(0.011)***		(0.010)***		(0.008)***
		[0.014]		[0.010]		[0.012]		[0.009]
Historical latitude (abs.)		1.194		0.488		0.884		1.211
		(3.857)		(2.697)		(3.402)		(3.097)
		[0.003]		[0.003]		[0.003]		[0.003]
Population density (ln)		0.066		0.047		0.046		0.036
		(0.010)***		(0.008)***		(0.007)***		(0.005)***
		[0.016]		[0.013]		[0.010]		[0.008]
Ethnic fractionalization		-0.058		-0.104		-0.052		-0.040
		(0.310)		(0.261)		(0.253)		(0.204)
		[0.165]		[0.140]		[0.128]		[0.115]
Ethnic polarization		0.410		0.164		0.371		0.237
		(0.687)		(0.596)		(0.536)		(0.416)
		[0.620]		[0.473]		[0.493]		[0.440]
Nighttime lights		-0.001		-0.004		0.001		0.000
		(0.006)		(0.004)		(0.004)		(0.004)
		[0.007]		[0.005]		[0.005]		[0.004]
Share of land for herding		0.096		0.061		0.060		0.054
		(0.055)*		(0.042)		(0.041)		(0.030)*
		[0.078]		[0.058]		[0.056]		[0.040]
Ruggedness		0.087		0.124		0.016		-0.044
		(0.128)		(0.107)		(0.089)		(0.062)
		[0.000]		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent var	0.35	0.35	0.23	0.23	0.22	0.23	0.16	0.16
SD of dependent var	0.96	0.96	0.77	0.77	0.74	0.75	0.61	0.62
Adj. R-squared	0.44	0.44	0.40	0.41	0.41	0.42	0.40	0.41
Number of Obs.	45,720	42,680	45,720	42,680	45,720	42,680	45,720	42,680
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	498	450	498	450	498	450	498	450

Note. The unit of observation is a within-country language group from the *Ethnologue* and a year. The dependent variables are based on information from the *Armed Conflict Location and Event Data Project* (ACLED) about the number of conflict events in sub-Sahara Africa for each year during the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000.

Table A22: Traditional herding, ethnic fractionalization and contemporary conflict in Africa: Interaction with previous conflicts

	Dependent variable: Number of conflict events (arsinh)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	0.168	0.185	0.151	0.157	0.126	0.146	0.070	0.087
	(0.064)***	(0.086)**	(0.048)***	(0.061)**	(0.049)**	(0.067)**	(0.037)*	(0.053)*
	[0.059]	[0.067]	[0.049]	[0.057]	[0.041]	[0.047]	[0.033]	[0.037]
Ethnic fractionalization	0.168	0.458	0.108	0.297	0.067	0.293	0.059	0.242
	(0.134)	(0.224)**	(0.106)	(0.188)	(0.106)	(0.173)*	(0.088)	(0.146)*
	[0.149]	[0.178]	[0.134]	[0.136]	[0.107]	[0.148]	[0.071]	[0.145]
Herding × Previous Conflict (1y)	0.976	1.067	1.016	1.086	0.515	0.578	0.601	0.621
	(0.273)***	(0.288)***	(0.339)***	(0.357)***	(0.200)**	(0.223)***	(0.196)***	(0.208)***
	[0.319]	[0.342]	[0.397]	[0.414]	[0.283]	[0.321]	[0.254]	[0.288]
Fractionalization × Previous Conflict (1y)	-1.750	-1.777	-1.540	-1.541	-1.841	-1.869	-1.761	-1.818
	(0.408)***	(0.412)***	(0.396)***	(0.396)***	(0.421)***	(0.448)***	(0.347)***	(0.374)***
	[0.396]	[0.413]	[0.409]	[0.413]	[0.420]	[0.464]	[0.387]	[0.436]
Previous conflict indicator (1y)	2.737	2.690	2.377	2.319	2.703	2.676	2.509	2.527
	(0.376)***	(0.382)***	(0.368)***	(0.371)***	(0.390)***	(0.420)***	(0.321)***	(0.347)***
	[0.355]	[0.380]	[0.372]	[0.385]	[0.393]	[0.436]	[0.359]	[0.407]
Settlement complexity		-0.005		-0.006		-0.001		-0.001
		(0.010)		(0.008)		(0.007)		(0.006)
		[0.010]		[0.008]		[0.007]		[0.006]
Jurisdictional hierarchy		0.046		0.033		0.034		0.023
		(0.014)***		(0.011)***		(0.010)***		(0.008)***
		[0.013]		[0.009]		[0.011]		[0.008]
Historical latitude (abs.)		1.112		0.565		0.904		1.125
		(3.586)		(2.530)		(3.098)		(2.813)
		[0.004]		[0.003]		[0.003]		[0.003]
Population density (ln)		0.065		0.045		0.044		0.033
		(0.010)***		(0.008)***		(0.007)***		(0.005)***
		[0.015]		[0.013]		[0.010]		[0.007]
Ethnic polarization		0.937		0.619		0.761		0.625
		(0.553)*		(0.482)		(0.407)*		(0.316)**
		[0.658]		[0.494]		[0.503]		[0.461]
Nighttime lights		-0.000		-0.003		0.002		0.001
		(0.005)		(0.004)		(0.004)		(0.003)
		[0.006]		[0.004]		[0.004]		[0.004]
Share of land for herding		0.111		0.073		0.068		0.063
		(0.054)**		(0.041)*		(0.040)*		(0.029)**
		[0.074]		[0.056]		[0.052]		[0.037]
Ruggedness		0.104		0.137		0.030		-0.025
		(0.123)		(0.102)		(0.086)		(0.058)
		[0.000]		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent var	0.35	0.35	0.23	0.23	0.22	0.23	0.16	0.16
SD of dependent var	0.96	0.96	0.77	0.77	0.74	0.75	0.61	0.62
Adj. R-squared	0.44	0.45	0.41	0.41	0.42	0.43	0.41	0.42
Number of Obs.	45,720	42,680	45,720	42,680	45,720	42,680	45,720	42,680
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	498	450	498	450	498	450	498	450

Note. The unit of observation is a within-country language group from the *Ethnologue* and a year. The dependent variables are based on information from the *Armed Conflict Location and Event Data Project* (ACLED) about the number of conflict events in sub-Sahara Africa for each year during the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000.

Table A23: Traditional herding, ethnic polarization and contemporary conflict in Africa: Interaction with previous conflicts

	Dependent variable: Number of conflict events (arsinh)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	0.163	0.163	0.151	0.143	0.127	0.133	0.072	0.076
	(0.065)**	(0.085)*	(0.049)***	(0.061)**	(0.050)**	(0.066)**	(0.037)*	(0.052)
	[0.060]	[0.070]	[0.049]	[0.058]	[0.041]	[0.048]	[0.032]	[0.037]
Ethnic polarization	-0.073	-0.449	-0.066	-0.438	0.088	-0.226	0.052	-0.230
	(0.268)	(0.643)	(0.222)	(0.550)	(0.203)	(0.508)	(0.156)	(0.409)
	[0.449]	[0.523]	[0.357]	[0.414]	[0.331]	[0.391]	[0.254]	[0.334]
Herding × Previous Conflict (1y)	1.148	1.216	1.199	1.240	0.715	0.753	0.823	0.821
	(0.291)***	(0.298)***	(0.334)***	(0.341)***	(0.257)***	(0.273)***	(0.261)***	(0.265)***
	[0.345]	[0.367]	[0.408]	[0.424]	[0.329]	[0.361]	[0.312]	[0.338]
Polarization × Previous Conflict (1y)	4.405	4.358	3.817	3.794	4.558	4.697	4.528	4.751
	(1.139)***	(1.181)***	(1.250)***	(1.295)***	(1.254)***	(1.343)***	(1.185)***	(1.242)***
	[1.130]	[1.216]	[1.247]	[1.331]	[1.455]	[1.561]	[1.462]	[1.532]
Previous conflict indicator (1y)	0.808	0.749	0.679	0.631	0.672	0.617	0.548	0.502
	(0.115)***	(0.118)***	(0.130)***	(0.136)***	(0.112)***	(0.115)***	(0.112)***	(0.115)***
	[0.137]	[0.127]	[0.147]	[0.131]	[0.135]	[0.142]	[0.133]	[0.142]
Settlement complexity		-0.008		-0.009		-0.004		-0.004
		(0.011)		(0.009)		(0.008)		(0.006)
		[0.010]		[0.008]		[0.007]		[0.006]
Jurisdictional hierarchy		0.049		0.036		0.036		0.026
		(0.014)***		(0.011)***		(0.010)***		(0.008)***
		[0.014]		[0.010]		[0.011]		[0.008]
Historical latitude (abs.)		0.492		0.023		0.260		0.520
		(3.650)		(2.566)		(3.163)		(2.852)
		[0.004]		[0.003]		[0.003]		[0.002]
Population density (ln)		0.065		0.046		0.045		0.034
		(0.010)***		(0.008)***		(0.007)***		(0.005)***
		[0.015]		[0.013]		[0.010]		[0.007]
Ethnic fractionalization		-0.126		-0.154		-0.116		-0.111
		(0.316)		(0.267)		(0.261)		(0.213)
		[0.158]		[0.132]		[0.122]		[0.105]
Nighttime lights		-0.001		-0.004		0.002		0.001
		(0.005)		(0.004)		(0.004)		(0.003)
		[0.006]		[0.005]		[0.005]		[0.004]
Share of land for herding		0.096		0.062		0.058		0.055
		(0.053)*		(0.041)		(0.039)		(0.029)*
		[0.074]		[0.056]		[0.053]		[0.038]
Ruggedness		0.071		0.111		-0.002		-0.058
		(0.126)		(0.105)		(0.087)		(0.060)
		[0.000]		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent var	0.35	0.35	0.23	0.23	0.22	0.23	0.16	0.16
SD of dependent var	0.96	0.96	0.77	0.77	0.74	0.75	0.61	0.62
Adj. R-squared	0.44	0.45	0.41	0.41	0.42	0.43	0.40	0.41
Number of Obs.	45,720	42,680	45,720	42,680	45,720	42,680	45,720	42,680
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	498	450	498	450	498	450	498	450

Note. The unit of observation is a within-country language group from the *Ethnologue* and a year. The dependent variables are based on information from the *Armed Conflict Location and Event Data Project* (ACLED) about the number of conflict events in sub-Sahara Africa for each year during the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000.

Table A24: Traditional herding and contemporary conflict globally: Number of months

	Dependent variable: Number of months experiencing a conflict event (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	0.803	0.755	0.672	0.627	0.629	0.676
	(0.250)***	(0.229)***	(0.219)***	(0.202)***	(0.201)***	(0.183)***
	[0.349]	[0.288]	[0.296]	[0.243]	[0.271]	[0.226]
Settlement complexity		-0.008		-0.006		-0.007
		(0.015)		(0.014)		(0.011)
		[0.018]		[0.016]		[0.014]
Jurisdictional hierarchy		0.044		0.045		0.044
		(0.021)**		(0.019)**		(0.017)**
		[0.034]		[0.025]		[0.024]
Historical latitude (abs.)		6.390		5.015		5.188
		(5.695)		(5.040)		(4.262)
		[0.006]		[0.006]		[0.005]
Population density (ln)		0.104		0.091		0.060
		(0.013)***		(0.012)***		(0.009)***
		[0.029]		[0.028]		[0.018]
Ethnic fractionalization		-0.172		-0.249		0.028
		(0.147)		(0.136)*		(0.111)
		[0.222]		[0.200]		[0.180]
Ethnic polarization		0.322		0.575		-0.568
		(0.559)		(0.500)		(0.414)
		[0.745]		[0.662]		[0.599]
Nighttime lights		-0.015		-0.016		-0.007
		(0.006)***		(0.005)***		(0.004)
		[0.009]		[0.008]		[0.006]
Share of land for herding		0.145		0.083		0.067
		(0.105)		(0.094)		(0.080)
		[0.135]		[0.123]		[0.091]
Ruggedness		-0.514		-0.469		-0.495
		(0.170)***		(0.156)***		(0.132)***
		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.10	0.095	0.093	0.087	0.11	0.11
Oster δ		4.42		4.41		5.03
Mean of dependent var	0.54	0.55	0.44	0.44	0.31	0.31
SD of dependent var	1.23	1.23	1.12	1.12	0.90	0.91
Adj. R-squared	0.29	0.33	0.29	0.33	0.23	0.25
Number of Obs.	7,036	6,239	7,036	6,239	7,036	6,239
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a within-country language group from the *Ethnologue*. The dependent variables are the number of months experiencing a conflict reported in the *Uppsala Conflict Data Program* (UCDP) about conflict events globally for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A25: Traditional herding and contemporary conflict in Africa: Number of months

	Dependent variable: Number of months experiencing a conflict event (arsinh)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	1.332	1.528	1.361	1.406	1.145	1.328	0.929	1.060
	(0.419)***	(0.487)***	(0.375)***	(0.429)***	(0.376)***	(0.427)***	(0.330)***	(0.377)***
	[0.342]	[0.409]	[0.315]	[0.387]	[0.309]	[0.327]	[0.303]	[0.298]
Settlement complexity		0.001		-0.001		-0.008		-0.026
		(0.040)		(0.036)		(0.036)		(0.032)
		[0.035]		[0.036]		[0.035]		[0.032]
Jurisdictional hierarchy		0.110		0.123		0.113		0.095
		(0.050)**		(0.044)***		(0.045)**		(0.039)**
		[0.043]		[0.045]		[0.041]		[0.039]
Historical latitude (abs.)		5.845		10.419		-0.783		-3.103
		(12.328)		(11.737)		(10.979)		(9.870)
		[0.013]		[0.013]		[0.013]		[0.013]
Population density (ln)		0.324		0.239		0.291		0.264
		(0.037)***		(0.034)***		(0.033)***		(0.028)***
		[0.060]		[0.052]		[0.053]		[0.043]
Ethnic fractionalization		0.399		0.167		0.348		0.231
		(0.816)		(0.741)		(0.821)		(0.758)
		[0.719]		[0.742]		[0.601]		[0.560]
Ethnic polarization		1.443		1.577		0.826		-0.164
		(2.095)		(1.863)		(1.993)		(1.764)
		[3.095]		[2.574]		[2.912]		[2.428]
Nighttime lights		0.013		0.004		0.012		0.005
		(0.017)		(0.015)		(0.016)		(0.014)
		[0.032]		[0.026]		[0.030]		[0.025]
Share of land for herding		0.256		0.182		0.318		0.372
		(0.212)		(0.187)		(0.181)*		(0.159)**
		[0.251]		[0.231]		[0.220]		[0.193]
Ruggedness		-0.807		-0.198		-0.821		-0.867
		(0.459)*		(0.429)		(0.388)**		(0.325)***
		[0.001]		[0.000]		[0.001]		[0.001]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.12	0.13	0.14	0.14	0.11	0.13	0.10	0.12
Oster δ		12.0		5.71		12.1		9.33
Mean of dependent var	1.39	1.41	1.05	1.06	1.05	1.06	0.81	0.82
SD of dependent var	1.70	1.71	1.52	1.52	1.51	1.51	1.35	1.35
Adj. R-squared	0.27	0.32	0.28	0.32	0.24	0.30	0.24	0.30
Number of Obs.	2,286	2,134	2,286	2,134	2,286	2,134	2,286	2,134
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	498	450	498	450	498	450	498	450

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of months experiencing a conflict reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A26: Traditional herding and contemporary conflict globally: Prolonged events

	Dependent variable: Incidence of conflict events (multinomial)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Cat. 1 (omitted): no incidence						
Cat. 2: no prolonged						
Dependence on herding	0.226	0.0802	0.165	0.136	0.760	0.617
	(0.412)	(0.518)	(0.423)	(0.569)	(0.481)	(0.567)
Cat. 3: prolonged						
Dependence on herding	2.201	2.444	1.944	2.137	2.600	3.412
	(0.576)***	(0.652)***	(0.609)***	(0.681)***	(0.687)***	(0.773)***
Baseline controls	No	Yes	No	Yes	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Elasticity of herding on:						
Cat. 1	-0.054	-0.060	-0.041	-0.047	-0.047	-0.060
Cat. 2	-0.025	-0.049	-0.020	-0.028	0.051	0.024
Cat. 3	0.23	0.28	0.21	0.25	0.29	0.41
Share of Cat.2	0.121	0.123	0.101	0.103	0.083	0.084
Share of Cat.3	0.099	0.099	0.085	0.084	0.057	0.058
Equality of Coefficients (p-value)	0.000	0.000	0.001	0.003	0.001	0.000
Pseudo R-squared	0.28	0.31	0.29	0.34	0.27	0.31
Number of Obs.	7,036	6,239	7,036	6,239	7,036	6,239
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,104	985	1,104	985	1,104	985

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables take the value of 0 if no conflicts occurred according to the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016, 1 if at least one conflict occurred but those between the same actors never spread over 3 months, and 2 if conflicts between the same actors spread over more than 3 months. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level.

Table A27: Traditional herding and contemporary conflict in Africa: Prolonged events

	Dependent variable: Incidence of conflict events (multinomial)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cat. 1 (omitted): no incidence								
Cat. 2: no prolonged Dependence on herding	-0.102	0.527	0.197	0.573	0.0784	0.749	-0.0637	0.313
	(0.579)	(0.747)	(0.499)	(0.649)	(0.541)	(0.717)	(0.511)	(0.685)
Cat. 3: prolonged Dependence on herding	1.932	2.284	2.734	2.730	1.892	2.249	1.941	2.127
	(0.706)***	(0.911)**	(0.663)***	(0.889)***	(0.690)***	(0.861)***	(0.728)***	(0.898)**
Baseline controls	No	Yes	No	Yes	No	Yes	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Elasticity of herding on:								
Cat. 1	-0.10	-0.16	-0.13	-0.15	-0.089	-0.14	-0.070	-0.094
Cat. 2	-0.12	-0.058	-0.091	-0.041	-0.075	0.0023	-0.082	-0.035
Cat. 3	0.26	0.27	0.38	0.37	0.26	0.29	0.29	0.31
Share of Cat.2	0.277	0.281	0.259	0.262	0.241	0.244	0.206	0.208
Share of Cat.3	0.241	0.244	0.175	0.175	0.192	0.194	0.149	0.150
Equality of Coefficients (p-value)	0.001	0.015	0.000	0.004	0.002	0.037	0.001	0.023
Pseudo R-squared	0.14	0.19	0.16	0.20	0.13	0.18	0.13	0.19
Number of Obs.	2,286	2,134	2,286	2,134	2,286	2,134	2,286	2,134
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	498	450	498	450	498	450	498	450

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables take the value of 0 if no conflicts occurred according to the *Armed Conflict Location and Event Data Project* (ACLED) during 1997 to 2016, 1 if at least one conflict occurred but those between the same actors never spread over 2 months, and 2 if conflicts between the same actors spread over more than 2 months. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level.

Table A28: Traditional herding and contemporary conflict in Africa: Multinomial logit analysis with GPT labeling

	Dependent variable: Incidence of conflict events (multinomial)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cat. 1 (omitted): no incidence								
Cat. 2: no revenge-taking								
Dependence on herding	0.0732	0.672	0.796	1.125	0.241	0.814	0.245	0.632
	(0.579)	(0.749)	(0.499)	(0.659)*	(0.532)	(0.698)	(0.516)	(0.671)
Cat. 3: revenge-taking								
Dependence on herding	2.049	2.364	2.190	1.918	2.280	2.638	1.893	1.915
	(0.725)***	(0.937)**	(0.748)***	(0.920)**	(0.726)***	(0.950)***	(0.695)***	(0.910)**
Baseline controls	No	Yes	No	Yes	No	Yes	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Elasticity of herding on:								
Cat. 1	-0.091	-0.14	-0.11	-0.12	-0.090	-0.14	-0.067	-0.088
Cat. 2	-0.074	-0.016	0.036	0.088	-0.042	0.019	-0.019	0.033
Cat. 3	0.29	0.30	0.29	0.23	0.32	0.35	0.28	0.27
Pseudo R-squared	0.14	0.19	0.15	0.19	0.14	0.18	0.14	0.19
Number of Obs.	2,286	2,134	2,286	2,134	2,286	2,134	2,286	2,134
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	498	450	498	450	498	450	498	450

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables take the value of 0 if no conflicts occurred according to the *Armed Conflict Location and Event Data Project* (ACLED) during 1997 to 2016, 1 if at least one conflict occurred but none of them were described as revenge-motivated, and 2 if at least one event occurred during this time was described as revenge-motivated. Baseline controls include settlement complexity, jurisdictional hierarchy, historical latitude (abs.), population density (ln), ethnic fractionalization and polarization, nighttime lights, the share of land used for herding, and terrain ruggedness. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level.

Table A29: Herding and revenge-taking in the descriptions of ACLED events

	Dependent variable: Indicator of containing revenge-related terms							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Herding-related terms	0.030	0.024	0.007	0.004	0.038	0.028	0.046	0.029
	(0.007)***	(0.006)***	(0.005)	(0.005)	(0.008)***	(0.008)***	(0.011)***	(0.009)***
Length of description (ln)		0.015		0.011		0.019		0.022
		(0.002)***		(0.001)***		(0.004)***		(0.005)***
Country FE	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	No	Yes	No	Yes	No	Yes	No	Yes
Source FE	No	Yes	No	Yes	No	Yes	No	Yes
Mean of dependent var	0.014	0.015	0.0093	0.010	0.020	0.021	0.026	0.026
SD of dependent var	0.12	0.12	0.096	0.10	0.14	0.14	0.16	0.16
Adj. R-squared	0.0014	0.017	0.000046	0.011	0.0024	0.036	0.0030	0.065
Number of Obs.	129258	120689	68,045	62,416	61,213	58,273	35,837	34,965

Note. The unit of observation is an event from the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. The dependent variables are based on the text description of the event. Coefficients are reported with standard errors clustered at the ethnicity level.

Table A30: Herding and revenge-taking in the descriptions of ACLED events: GPT labeling

	Dependent variable: Indicator of being revenge-related							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Herding-related terms	0.076	0.065	0.057	0.052	0.072	0.056	0.065	0.039
	(0.018)***	(0.017)***	(0.021)***	(0.021)**	(0.021)***	(0.019)***	(0.022)***	(0.017)**
Length of description (ln)		0.023		0.017		0.031		0.033
		(0.002)***		(0.002)***		(0.004)***		(0.006)***
Country FE	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	No	Yes	No	Yes	No	Yes	No	Yes
Source FE	No	Yes	No	Yes	No	Yes	No	Yes
Mean of dependent var	0.015	0.015	0.010	0.010	0.021	0.021	0.026	0.026
SD of dependent var	0.12	0.12	0.10	0.10	0.14	0.14	0.16	0.16
Adj. R-squared	0.0025	0.022	0.00076	0.016	0.0027	0.031	0.0022	0.044
Number of Obs.	120689	120689	62,416	62,416	58,273	58,273	34,965	34,965

Note. The unit of observation is an event from the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. The dependent variables are based on the text description of the event. Coefficients are reported with standard errors clustered at the ethnicity level.

Table A31: Traditional herding and contemporary conflict globally: Transhumance and non-transhumance herding

	Dependent variable: Number of conflict events (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
Transhumance herding	1.249	1.170	1.023	0.972	1.022	0.969
	(0.356)***	(0.357)***	(0.320)***	(0.321)***	(0.275)***	(0.277)***
	[0.401]	[0.399]	[0.338]	[0.336]	[0.323]	[0.306]
Non-transhumance herding	1.201	0.558	0.998	0.423	0.840	0.532
	(0.361)***	(0.317)*	(0.301)***	(0.270)	(0.271)***	(0.242)**
	[0.452]	[0.420]	[0.405]	[0.348]	[0.289]	[0.319]
Settlement complexity		0.012		0.012		0.006
		(0.016)		(0.014)		(0.012)
		[0.022]		[0.019]		[0.016]
Jurisdictional hierarchy		0.060		0.057		0.055
		(0.025)**		(0.022)***		(0.020)***
		[0.035]		[0.026]		[0.025]
Historical latitude (abs.)		9.396		7.399		7.338
		(7.040)		(6.153)		(4.957)
		[0.008]		[0.007]		[0.006]
Population density (ln)		0.123		0.106		0.070
		(0.015)***		(0.014)***		(0.010)***
		[0.033]		[0.032]		[0.020]
Ethnic fractionalization		-0.226		-0.305		0.032
		(0.170)		(0.155)**		(0.126)
		[0.253]		[0.225]		[0.200]
Ethnic polarization		0.359		0.714		-0.762
		(0.674)		(0.587)		(0.489)
		[0.862]		[0.762]		[0.685]
Nighttime lights		-0.018		-0.020		-0.008
		(0.007)***		(0.006)***		(0.005)
		[0.010]		[0.009]		[0.006]
Share of land for herding		0.165		0.103		0.079
		(0.121)		(0.108)		(0.089)
		[0.155]		[0.138]		[0.100]
Ruggedness		-0.611		-0.555		-0.532
		(0.198)***		(0.180)***		(0.148)***
		[0.000]		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Diff(Transhumant vs. non-transhumant) p-value	0.907	0.144	0.945	0.144	0.554	0.174
Mean of dependent var	0.63	0.63	0.51	0.51	0.35	0.36
SD of dependent var	1.46	1.46	1.31	1.31	1.05	1.06
Adj. R-squared	0.29	0.32	0.29	0.32	0.23	0.26
Number of Obs.	6,502	6,239	6,502	6,239	6,502	6,239
Number of Countries	211	211	211	211	211	211
Number of Clusters	1,017	985	1,017	985	1,017	985

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000.

Table A32: Traditional herding and contemporary conflict in Africa: Transhumant and non-transhumant herding

	Dependent variable: Number of conflict events (arsinh)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Transhumance herding	2.053	2.689	2.044	2.422	1.641	2.097	1.403	1.801
	(0.669)***	(0.917)***	(0.606)***	(0.816)***	(0.567)***	(0.749)***	(0.506)***	(0.656)***
	[0.571]	[0.749]	[0.530]	[0.673]	[0.493]	[0.597]	[0.470]	[0.528]
Non-transhumance herding	1.285	1.013	1.256	0.914	1.142	0.987	0.780	0.680
	(0.582)**	(0.584)*	(0.498)**	(0.505)*	(0.514)**	(0.512)*	(0.461)*	(0.477)
	[0.713]	[0.563]	[0.575]	[0.533]	[0.688]	[0.478]	[0.619]	[0.470]
Settlement complexity		0.070		0.057		0.037		0.019
		(0.055)		(0.048)		(0.047)		(0.039)
		[0.044]		[0.043]		[0.034]		[0.031]
Jurisdictional hierarchy		0.144		0.147		0.141		0.116
		(0.063)**		(0.054)***		(0.055)**		(0.047)**
		[0.051]		[0.053]		[0.047]		[0.043]
Historical latitude (abs.)		11.756		16.229		1.859		-3.492
		(15.067)		(13.879)		(13.089)		(11.847)
		[0.015]		[0.015]		[0.014]		[0.014]
Population density (ln)		0.397		0.294		0.342		0.310
		(0.045)***		(0.040)***		(0.038)***		(0.033)***
		[0.072]		[0.063]		[0.062]		[0.052]
Ethnic fractionalization		0.437		0.218		0.320		0.170
		(1.007)		(0.881)		(1.005)		(0.927)
		[0.785]		[0.783]		[0.679]		[0.653]
Ethnic polarization		1.587		1.728		0.645		-0.363
		(2.546)		(2.229)		(2.396)		(2.119)
		[3.701]		[3.134]		[3.370]		[2.890]
Nighttime lights		0.003		-0.004		0.006		-0.000
		(0.021)		(0.018)		(0.019)		(0.017)
		[0.038]		[0.032]		[0.035]		[0.030]
Share of land for herding		0.347		0.239		0.409		0.481
		(0.258)		(0.226)		(0.214)*		(0.188)**
		[0.295]		[0.268]		[0.247]		[0.214]
Ruggedness		-0.737		-0.113		-0.758		-0.901
		(0.551)		(0.512)		(0.446)*		(0.368)**
		[0.001]		[0.001]		[0.001]		[0.001]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Diff(Transhumant vs. non-transhumant) p-value	0.282	0.058	0.223	0.059	0.430	0.137	0.282	0.094
Mean of dependent var	1.63	1.65	1.22	1.24	1.20	1.21	0.92	0.93
SD of dependent var	2.07	2.08	1.83	1.84	1.77	1.78	1.57	1.58
Adj. R-squared	0.28	0.34	0.29	0.33	0.25	0.31	0.26	0.31
Number of Obs.	2,200	2,134	2,200	2,134	2,200	2,134	2,200	2,134
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	466	450	466	450	466	450	466	450

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000.

Table A33: Coefficients on herding when controlling for different measures of transhuman pastoralism

	Dependent variable: Number of conflict events (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)
No THP controls	0.949	0.912	0.773	0.740	0.735	0.785
	(0.297)***	(0.268)***	(0.257)***	(0.234)***	(0.226)***	(0.206)***
	[0.391]	[0.337]	[0.329]	[0.284]	[0.295]	[0.255]
	Panel A: Narrow definition of transhumance					
Avg. neighbor THP (cont.)	0.951	0.835	0.759	0.652	0.722	0.727
	(0.316)***	(0.280)***	(0.272)***	(0.241)***	(0.238)***	(0.216)***
	[0.440]	[0.360]	[0.375]	[0.309]	[0.319]	[0.267]
Max. neighbor THP (cont.)	0.627	0.540	0.481	0.404	0.494	0.521
	(0.304)**	(0.275)**	(0.260)*	(0.235)*	(0.230)**	(0.212)**
	[0.431]	[0.354]	[0.366]	[0.301]	[0.302]	[0.255]
Any neighbor THP $>$ 0.15	0.835	0.751	0.675	0.596	0.617	0.664
	(0.296)***	(0.269)***	(0.252)***	(0.232)**	(0.230)***	(0.210)***
	[0.425]	[0.345]	[0.368]	[0.295]	[0.303]	[0.264]
Any neighbor THP $>$ 0.35	0.644	0.616	0.494	0.462	0.508	0.565
	(0.296)**	(0.266)**	(0.254)*	(0.228)**	(0.220)**	(0.204)***
	[0.433]	[0.346]	[0.374]	[0.290]	[0.290]	[0.247]
Any neighbor THP $>$ 0.55	0.707	0.668	0.551	0.519	0.590	0.632
	(0.300)**	(0.274)**	(0.257)**	(0.237)**	(0.230)**	(0.212)***
	[0.393]	[0.341]	[0.329]	[0.289]	[0.294]	[0.253]
Any neighbor THP $>$ 0.75	0.793	0.747	0.634	0.587	0.654	0.685
	(0.293)***	(0.277)***	(0.253)**	(0.240)**	(0.222)***	(0.212)***
	[0.358]	[0.310]	[0.301]	[0.262]	[0.274]	[0.243]
	Panel B: Broad definition of transhumance					
Avg. neighbor THP (cont.)	0.967	0.869	0.777	0.691	0.730	0.752
	(0.320)***	(0.282)***	(0.276)***	(0.243)***	(0.239)***	(0.217)***
	[0.435]	[0.360]	[0.373]	[0.312]	[0.316]	[0.271]
Max. neighbor THP (cont.)	0.614	0.546	0.467	0.409	0.474	0.516
	(0.312)**	(0.278)**	(0.268)*	(0.238)*	(0.234)**	(0.213)**
	[0.441]	[0.365]	[0.378]	[0.312]	[0.310]	[0.267]
Any neighbor THP $>$ 0.15	0.870	0.776	0.713	0.627	0.623	0.662
	(0.304)***	(0.276)***	(0.259)***	(0.239)***	(0.234)***	(0.213)***
	[0.440]	[0.364]	[0.379]	[0.311]	[0.320]	[0.282]
Any neighbor THP $>$ 0.35	0.607	0.609	0.462	0.463	0.476	0.555
	(0.305)**	(0.269)**	(0.264)*	(0.232)**	(0.224)**	(0.202)***
	[0.436]	[0.342]	[0.381]	[0.292]	[0.290]	[0.243]
Any neighbor THP $>$ 0.55	0.704	0.674	0.542	0.520	0.590	0.641
	(0.301)**	(0.276)**	(0.258)**	(0.238)**	(0.231)**	(0.213)***
	[0.394]	[0.345]	[0.330]	[0.293]	[0.294]	[0.255]
Any neighbor THP $>$ 0.75	0.801***	0.769***	0.637**	0.602**	0.660***	0.702***
	(0.294)	(0.279)	(0.254)	(0.242)	(0.222)	(0.213)
	[0.363]	[0.319]	[0.304]	[0.269]	[0.278]	[0.247]
Baseline Controls	No	Yes	No	Yes	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. The model controls for agricultural suitability within the polygon, the level of THP in neighboring polygons, the interaction between these two factors, and other baseline controls. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level.

Table A34: Coefficients on herding when controlling for different measures of transhuman pastoralism in Africa

	Dependent variable: Number of conflict events (arsinh)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No THP controls	1.706	1.904	1.687	1.716	1.378	1.577	1.113	1.276
	(0.512)***	(0.591)***	(0.456)***	(0.519)***	(0.436)***	(0.494)***	(0.383)***	(0.435)***
	[0.420]	[0.491]	[0.383]	[0.463]	[0.374]	[0.383]	[0.367]	[0.354]
Panel A: Narrow definition of transhumance								
Avg. neighbor THP (cont.)	1.458	1.626	1.464	1.503	1.186	1.402	0.971	1.151
	(0.566)**	(0.637)**	(0.485)***	(0.546)***	(0.484)**	(0.537)***	(0.418)**	(0.469)**
	[0.479]	[0.535]	[0.398]	[0.499]	[0.443]	[0.427]	[0.426]	[0.393]
Max. neighbor THP (cont.)	0.943	1.109	1.039	1.085	0.731	0.932	0.568	0.739
	(0.553)*	(0.602)*	(0.469)**	(0.516)**	(0.465)	(0.501)*	(0.393)	(0.437)*
	[0.500]	[0.544]	[0.388]	[0.476]	[0.464]	[0.435]	[0.433]	[0.408]
Any neighbor THP $>$ 0.15	1.591	1.612	1.586	1.497	1.311	1.372	0.997	1.076
	(0.474)***	(0.549)***	(0.426)***	(0.489)***	(0.406)***	(0.454)***	(0.362)***	(0.400)***
	[0.453]	[0.536]	[0.383]	[0.489]	[0.454]	[0.430]	[0.435]	[0.395]
Any neighbor THP $>$ 0.35	1.033	1.184	1.051	1.092	0.846	1.011	0.621	0.751
	(0.502)**	(0.578)**	(0.441)**	(0.507)**	(0.425)**	(0.485)**	(0.370)*	(0.425)*
	[0.532]	[0.567]	[0.437]	[0.492]	[0.478]	[0.453]	[0.424]	[0.422]
Any neighbor THP $>$ 0.55	1.178	1.385	1.243	1.284	0.894	1.111	0.740	0.921
	(0.534)**	(0.608)**	(0.464)***	(0.524)**	(0.452)**	(0.508)**	(0.392)*	(0.444)**
	[0.476]	[0.573]	[0.412]	[0.523]	[0.416]	[0.437]	[0.389]	[0.388]
Any neighbor THP $>$ 0.75	1.390	1.557	1.401	1.413	1.125	1.293	0.897	1.038
	(0.517)***	(0.600)***	(0.462)***	(0.530)***	(0.435)***	(0.499)***	(0.378)**	(0.437)**
	[0.412]	[0.492]	[0.380]	[0.461]	[0.358]	[0.384]	[0.333]	[0.351]
Panel B: Broad definition of transhumance								
Avg. neighbor THP (cont.)	1.438	1.590	1.421	1.448	1.193	1.397	0.992	1.157
	(0.563)**	(0.633)**	(0.479)***	(0.539)***	(0.483)**	(0.534)***	(0.418)**	(0.467)**
	[0.469]	[0.536]	[0.390]	[0.499]	[0.435]	[0.429]	[0.413]	[0.396]
Max. neighbor THP (cont.)	0.922	1.120	0.989	1.066	0.743	0.968	0.604	0.787
	(0.552)*	(0.601)*	(0.469)**	(0.516)**	(0.464)	(0.502)*	(0.392)	(0.437)*
	[0.491]	[0.535]	[0.379]	[0.467]	[0.454]	[0.431]	[0.415]	[0.403]
Any neighbor THP $>$ 0.15	1.618	1.654	1.565	1.495	1.352	1.416	1.049	1.136
	(0.476)***	(0.547)***	(0.429)***	(0.491)***	(0.403)***	(0.447)***	(0.361)***	(0.397)***
	[0.409]	[0.495]	[0.348]	[0.457]	[0.422]	[0.401]	[0.410]	[0.379]
Any neighbor THP $>$ 0.35	1.049	1.203	1.042	1.082	0.885	1.053	0.663	0.804
	(0.499)**	(0.577)**	(0.438)**	(0.504)**	(0.425)**	(0.486)**	(0.370)*	(0.428)*
	[0.521]	[0.559]	[0.432]	[0.486]	[0.467]	[0.450]	[0.417]	[0.422]
Any neighbor THP $>$ 0.55	1.168	1.389	1.215	1.275	0.905	1.129	0.766	0.937
	(0.535)**	(0.608)**	(0.464)***	(0.524)**	(0.454)**	(0.508)**	(0.393)*	(0.444)**
	[0.480]	[0.571]	[0.414]	[0.522]	[0.415]	[0.434]	[0.377]	[0.383]
Any neighbor THP $>$ 0.75	1.403	1.598	1.392	1.436	1.161	1.342	0.945	1.083
	(0.514)***	(0.599)***	(0.458)***	(0.529)***	(0.435)***	(0.499)***	(0.380)**	(0.436)**
	[0.409]	[0.496]	[0.377]	[0.463]	[0.357]	[0.389]	[0.327]	[0.351]
Baseline Controls	No	Yes	No	Yes	No	Yes	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. The model controls for agricultural suitability within the polygon, the level of THP in neighboring polygons, the interaction between these two factors, and other baseline controls. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level.

Table A35: Traditional herding and contemporary conflict in grow and non-grow seasons globally

	Dependent variable: Number of conflict events (arsinh)					
	All conflicts		Civil conflicts		Non-civil conflicts	
	Grow	Non-grow	Grow	Non-grow	Grow	Non-grow
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	0.835	0.805	0.641	0.684	0.697	0.599
	(0.229)***	(0.232)***	(0.199)***	(0.202)***	(0.173)***	(0.169)***
	[0.291]	[0.284]	[0.247]	[0.232]	[0.215]	[0.207]
Settlement complexity	-0.007	-0.007	-0.006	-0.005	-0.005	-0.006
	(0.015)	(0.015)	(0.014)	(0.014)	(0.011)	(0.011)
	[0.018]	[0.018]	[0.016]	[0.016]	[0.012]	[0.013]
Jurisdictional hierarchy	0.055	0.057	0.049	0.054	0.053	0.048
	(0.021)**	(0.022)***	(0.019)***	(0.019)***	(0.017)***	(0.017)***
	[0.027]	[0.030]	[0.020]	[0.021]	[0.017]	[0.021]
Historical latitude (abs.)	6.441	6.785	4.718	5.365	5.534	5.227
	(6.096)	(6.385)	(5.325)	(5.594)	(4.240)	(4.259)
	[0.006]	[0.006]	[0.006]	[0.005]	[0.005]	[0.004]
Population density (ln)	0.101	0.094	0.087	0.080	0.050	0.052
	(0.014)***	(0.013)***	(0.013)***	(0.012)***	(0.009)***	(0.008)***
	[0.029]	[0.027]	[0.027]	[0.025]	[0.016]	[0.016]
Ethnic fractionalization	-0.197	-0.113	-0.220	-0.212	-0.070	0.081
	(0.147)	(0.147)	(0.134)	(0.133)	(0.102)	(0.105)
	[0.200]	[0.217]	[0.182]	[0.186]	[0.136]	[0.159]
Ethnic polarization	0.178	0.050	0.433	0.482	-0.499	-0.803
	(0.585)	(0.588)	(0.509)	(0.507)	(0.406)	(0.416)*
	[0.693]	[0.742]	[0.634]	[0.625]	[0.488]	[0.567]
Nighttime lights	-0.017	-0.016	-0.019	-0.016	-0.006	-0.008
	(0.006)***	(0.005)***	(0.005)***	(0.005)***	(0.005)	(0.004)**
	[0.008]	[0.008]	[0.008]	[0.007]	[0.005]	[0.005]
Share of land for herding	0.126	0.103	0.070	0.058	0.063	0.042
	(0.104)	(0.102)	(0.092)	(0.091)	(0.072)	(0.072)
	[0.128]	[0.125]	[0.113]	[0.109]	[0.079]	[0.080]
Ruggedness	-0.534	-0.605	-0.486	-0.526	-0.455	-0.473
	(0.176)***	(0.169)***	(0.157)***	(0.154)***	(0.129)***	(0.119)***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.10	0.10	0.089	0.096	0.12	0.11
Oster δ	4.30	4.63	4.50	4.47	4.14	5.39
Mean of dependent var	0.48	0.48	0.38	0.38	0.26	0.27
SD of dependent var	1.24	1.24	1.11	1.11	0.87	0.87
Adj. R-squared	0.30	0.29	0.31	0.28	0.23	0.23
Number of Obs.	6,239	6,239	6,239	6,239	6,239	6,239
Number of Countries	211	211	211	211	211	211
Number of Clusters	985	985	985	985	985	985

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Uppsala Conflict Data Program* (UCDP) for the period 1989-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A36: Traditional herding and contemporary conflict in grow and non-grow seasons in Africa

	Dependent variable: Number of conflict events (arsinh)							
	All conflicts		Civil conflicts		Non-civil conflicts		Localized conflicts	
	grow	nongrow	grow	nongrow	grow	nongrow	grow	nongrow
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependence on herding	1.721	1.732	1.556	1.480	1.397	1.391	1.112	1.123
	(0.504)***	(0.531)***	(0.440)***	(0.464)***	(0.417)***	(0.429)***	(0.369)***	(0.373)***
	[0.416]	[0.431]	[0.375]	[0.423]	[0.340]	[0.317]	[0.315]	[0.300]
Settlement complexity	-0.006	-0.017	-0.009	-0.022	-0.017	-0.022	-0.033	-0.033
	(0.044)	(0.045)	(0.039)	(0.040)	(0.037)	(0.038)	(0.032)	(0.032)
	[0.043]	[0.043]	[0.043]	[0.042]	[0.034]	[0.040]	[0.033]	[0.035]
Jurisdictional hierarchy	0.144	0.146	0.147	0.133	0.133	0.142	0.114	0.119
	(0.053)***	(0.057)**	(0.045)***	(0.050)***	(0.045)***	(0.048)***	(0.039)***	(0.041)***
	[0.045]	[0.053]	[0.047]	[0.045]	[0.040]	[0.049]	[0.037]	[0.041]
Historical latitude (abs.)	12.963	-2.663	11.133	4.021	4.185	-7.560	-1.920	-10.378
	(14.315)	(12.877)	(12.446)	(12.494)	(11.810)	(10.624)	(10.229)	(9.855)
	[0.015]	[0.013]	[0.014]	[0.014]	[0.013]	[0.012]	[0.013]	[0.011]
Population density (ln)	0.313	0.341	0.229	0.245	0.264	0.285	0.233	0.248
	(0.040)***	(0.040)***	(0.035)***	(0.037)***	(0.034)***	(0.032)***	(0.029)***	(0.028)***
	[0.061]	[0.063]	[0.054]	[0.056]	[0.049]	[0.054]	[0.042]	[0.043]
Ethnic fractionalization	0.173	0.472	-0.004	0.280	0.130	0.275	-0.120	0.301
	(0.918)	(1.026)	(0.806)	(0.889)	(0.897)	(0.901)	(0.832)	(0.834)
	[0.709]	[0.885]	[0.671]	[0.886]	[0.586]	[0.649]	[0.572]	[0.607]
Ethnic polarization	0.903	2.387	1.568	2.101	-0.048	1.544	-0.789	0.945
	(2.321)	(2.462)	(2.029)	(2.128)	(2.099)	(2.144)	(1.855)	(1.906)
	[3.164]	[3.114]	[2.733]	[2.439]	[2.670]	[2.760]	[2.317]	[2.232]
Nighttime lights	0.007	-0.002	-0.005	-0.011	0.009	-0.001	0.005	-0.006
	(0.019)	(0.018)	(0.016)	(0.017)	(0.017)	(0.015)	(0.014)	(0.014)
	[0.034]	[0.033]	[0.026]	[0.028]	[0.030]	[0.027]	[0.024]	[0.024]
Share of land for herding	0.342	0.329	0.255	0.253	0.373	0.324	0.360	0.400
	(0.227)	(0.225)	(0.200)	(0.195)	(0.182)**	(0.182)*	(0.158)**	(0.157)**
	[0.279]	[0.257]	[0.246]	[0.223]	[0.215]	[0.234]	[0.189]	[0.189]
Ruggedness	-0.633	-0.489	-0.208	0.128	-0.530	-0.641	-0.705	-0.731
	(0.501)	(0.490)	(0.461)	(0.451)	(0.396)	(0.391)	(0.323)**	(0.315)**
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.14	0.14	0.14	0.14	0.13	0.13	0.12	0.12
Oster δ	5.98	7.73	4.06	4.36	6.10	8.19	5.74	7.32
Mean of dependent var	1.27	1.29	0.93	0.94	0.90	0.92	0.68	0.69
SD of dependent var	1.82	1.85	1.58	1.60	1.53	1.55	1.34	1.36
Adj. R-squared	0.32	0.32	0.31	0.30	0.29	0.30	0.29	0.30
Number of Obs.	2,134	2,134	2,134	2,134	2,134	2,134	2,134	2,134
Number of Countries	57	57	57	57	57	57	57	57
Number of Clusters	450	450	450	450	450	450	450	450

Note. The unit of observation is a language group, which is defined as a language from *Ethnologue* spoken in a country. The dependent variables are the number of conflict events reported in the *Armed Conflict Location and Event Data Project* (ACLED) about conflict events in sub-Sahara Africa for the period 1997-2016. They are measured as the inverse hyperbolic sine (arsinh) of the value. Coefficients are reported with standard errors in parentheses clustered at the ethnicity level. Standard errors in square brackets are clustered at the country level. The coefficients for historical latitude (abs.) and ruggedness have been scaled up by 1000. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A37: The historical origins of a psychology of punishment: Additional individual-level controls

	Dependent variable:			
		Negative reciprocity components, 0–10 index		
	Negative reciprocity index	Punish if ... treated unfairly		Willingness to
	First principal component	Self	Others	take revenge
	(1)	(2)	(3)	(4)
Dependence on herding	0.435	1.309	1.230	0.840
	(0.216)**	(0.627)**	(0.531)**	(0.565)
	[0.265]	[0.715]	[0.663]	[0.685]
Settlement complexity	0.010	0.030	0.006	0.038
	(0.019)	(0.057)	(0.048)	(0.051)
	[0.019]	[0.058]	[0.044]	[0.053]
Jurisdictional hierarchy	0.019	0.053	0.014	0.069
	(0.024)	(0.066)	(0.066)	(0.064)
	[0.029]	[0.079]	[0.078]	[0.075]
Historical latitude (abs.)	-0.003	-0.007	-0.016	-0.004
	(0.004)	(0.010)	(0.012)	(0.011)
	[0.006]	[0.013]	[0.022]	[0.012]
Age	-0.004	-0.006	-0.003	-0.020
	(0.001)***	(0.004)	(0.004)	(0.004)***
	[0.002]	[0.006]	[0.005]	[0.005]
Age squared	-0.000	-0.000	-0.000	0.000
	(0.000)***	(0.000)***	(0.000)***	(0.000)
	[0.000]	[0.000]	[0.000]	[0.000]
Female indicator	-0.129	-0.346	-0.290	-0.345
	(0.009)***	(0.028)***	(0.026)***	(0.026)***
	[0.012]	[0.038]	[0.032]	[0.036]
Subj. cognitive skills	0.040	0.097	0.101	0.106
	(0.003)***	(0.007)***	(0.008)***	(0.008)***
	[0.004]	[0.010]	[0.011]	[0.012]
Log [Household income p/c]	0.013	0.036	0.045	0.021
	(0.007)**	(0.019)*	(0.018)**	(0.018)
	[0.009]	[0.025]	[0.024]	[0.023]
Education level (1-3)	-0.006	0.044	0.108	-0.163
	(0.008)	(0.023)*	(0.024)***	(0.024)***
	[0.010]	[0.035]	[0.034]	[0.025]
Religion FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.064	0.063	0.060	0.041
Oster δ	23.9	26.4	14.2	98.7
Mean of dependent var	-0.00053	4.21	4.36	3.64
SD of dependent var	1.00	3.04	3.04	3.00
Adj. R-squared	0.11	0.078	0.088	0.11
Number of Obs.	72,538	72,601	72,596	73,300
Number of Countries	75	75	75	75
Number of Clusters	951	951	951	951

Note. The unit of observation is an individual from the *Global Preference Survey* (GPS). The dependent variable in columns (1) is the negative reciprocity index from GPS, constructed as the first principal component of three self-assessments in GPS that measure people's propensity for altruistic punishment and for second-party punishment. The dependent variables in columns (2)–(4) correspond to the individual survey questions. Coefficients are reported with standard errors in parentheses clustered at the district level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A38: The historical origins of a psychology of punishment: Placebo outcomes

	Dependent variable:									
	Trust		Patience		Risk-taking		Pos. reciprocity		Altruism	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependence on herding	0.453	0.472	-0.018	-0.047	0.232	0.213	0.020	-0.076	0.098	0.025
	(0.137)***	(0.148)***	(0.112)	(0.124)	(0.165)	(0.183)	(0.166)	(0.185)	(0.149)	(0.166)
	[0.159]	[0.168]	[0.108]	[0.095]	[0.188]	[0.208]	[0.190]	[0.222]	[0.145]	[0.154]
Settlement complexity		0.006		-0.004		0.002		-0.023		-0.017
		(0.011)		(0.010)		(0.015)		(0.014)		(0.014)
		[0.013]		[0.010]		[0.014]		[0.015]		[0.016]
Jurisdictional hierarchy		-0.013		0.020		0.026		-0.020		-0.009
		(0.015)		(0.014)		(0.017)		(0.019)		(0.015)
		[0.016]		[0.016]		[0.021]		[0.025]		[0.013]
Historical latitude (abs.)		-0.008		-0.008		-0.009		0.004		-0.002
		(0.003)***		(0.004)*		(0.003)***		(0.003)		(0.004)
		[0.005]		[0.004]		[0.004]		[0.006]		[0.005]
Age		0.002		0.007		-0.002		0.010		-0.001
		(0.001)**		(0.001)***		(0.001)		(0.001)***		(0.001)
		[0.002]		[0.002]		[0.002]		[0.002]		[0.001]
Age squared		0.000		-0.000		-0.000		-0.000		-0.000
		(0.000)		(0.000)***		(0.000)***		(0.000)***		(0.000)
		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]
Female indicator		0.027		-0.073		-0.204		0.022		0.065
		(0.010)***		(0.009)***		(0.010)***		(0.010)**		(0.010)***
		[0.015]		[0.014]		[0.015]		[0.011]		[0.012]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.067	0.070	-0.0026	-0.0069	0.034	0.031	0.0029	-0.011	0.014	0.0037
Oster δ		34.6		-5.65		17.7		-2.51		1.00
Mean of dependent var	-0.00080	-0.00079	0.000068	-0.00089	0.015	0.015	-0.0045	-0.0039	0.0066	0.0067
SD of dependent var	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.00	1.00	1.00
Adj. R-squared	0.088	0.092	0.14	0.16	0.095	0.15	0.12	0.12	0.12	0.12
Number of Obs.	74,333	74,095	75,158	74,922	75,141	74,899	75,594	75,344	75,346	75,098
Number of Countries	75	75	75	75	75	75	75	75	75	75
Number of Clusters	951	951	951	951	951	951	951	951	951	951

Note. The unit of observation is an individual from the *Global Preference Survey* (GPS). The dependent variables are measures of a psychology of punishment from the GPS, elicited through three self-assessments to measure people's propensity for altruistic punishment and for second-party punishment. Coefficients are reported with standard errors in parentheses clustered at the district level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A39: The historical origins of a psychology of punishment: Controlling for trust

	Dependent variable:			
		Negative reciprocity components, 0–10 index		
	Negative reciprocity index	Punish if ... treated unfairly		Willingness to
	First principal component	Self	Others	take revenge
	(1)	(2)	(3)	(4)
Dependence on herding	0.453	1.362	1.267	0.876
	(0.218)**	(0.637)**	(0.541)**	(0.569)
	[0.272]	[0.737]	[0.687]	[0.694]
Trust	0.083	0.156	0.270	0.209
	(0.009)***	(0.025)***	(0.025)***	(0.027)***
	[0.015]	[0.042]	[0.041]	[0.042]
Settlement complexity	0.014	0.040	0.017	0.046
	(0.020)	(0.058)	(0.050)	(0.050)
	[0.020]	[0.059]	[0.045]	[0.053]
Jurisdictional hierarchy	0.022	0.062	0.022	0.076
	(0.024)	(0.068)	(0.067)	(0.063)
	[0.030]	[0.082]	[0.081]	[0.075]
Historical latitude (abs.)	-0.003	-0.007	-0.016	-0.003
	(0.004)	(0.011)	(0.012)	(0.011)
	[0.006]	[0.013]	[0.022]	[0.012]
Age	-0.005	-0.006	-0.004	-0.023
	(0.001)***	(0.004)	(0.004)	(0.004)***
	[0.002]	[0.006]	[0.005]	[0.005]
Age squared	-0.000	-0.000	-0.000	0.000
	(0.000)***	(0.000)***	(0.000)***	(0.000)
	[0.000]	[0.000]	[0.000]	[0.000]
Female indicator	-0.161	-0.430	-0.382	-0.420
	(0.009)***	(0.028)***	(0.025)***	(0.026)***
	[0.012]	[0.038]	[0.031]	[0.037]
Country FE	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.067	0.066	0.062	0.043
Oster δ	164.5	163.2	28.7	-38.5
Mean of dependent var	0.0019	4.22	4.37	3.65
SD of dependent var	1.00	3.04	3.03	3.00
Adj. R-squared	0.10	0.072	0.085	0.10
Number of Obs.	72,990	73,045	73,045	73,725
Number of Countries	75	75	75	75
Number of Clusters	951	951	951	951

Note. The unit of observation is an individual from the *Global Preference Survey* (GPS). The dependent variable in columns (1) is the negative reciprocity index from GPS, constructed as the first principal component of three self-assessments in GPS that measure people's propensity for altruistic punishment and for second-party punishment. The dependent variables in columns (2)–(4) correspond to the individual survey questions. Coefficients are reported with standard errors in parentheses clustered at the district level. Standard errors in square brackets are clustered at the country level. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A40: Culture-of-honor related folklores in Ethnographic Atlas societies with at least 40 motifs

	Dependent variable:					
	Share of words related to ... that appear in group's folklore					
	Violence/Deterrence/ Punishment/Revenge		Violence/Deterrence		Punishment/Revenge	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	0.151	0.171	0.144	0.169	0.197	0.184
	(0.046)***	(0.048)***	(0.049)***	(0.050)***	(0.057)***	(0.082)**
	[0.065]	[0.068]	[0.070]	[0.073]	[0.064]	[0.088]
ln(number of publications)	0.077	0.078	0.073	0.073	0.101	0.106
	(0.010)***	(0.011)***	(0.009)***	(0.010)***	(0.023)***	(0.026)***
	[0.013]	[0.012]	[0.013]	[0.012]	[0.032]	[0.034]
ln(year of first publication)	1.304	1.381	1.225	1.300	1.809	1.902
	(0.501)**	(0.641)**	(0.492)**	(0.626)**	(1.080)*	(1.411)
	[0.486]	[0.553]	[0.542]	[0.631]	[0.861]	[1.055]
Settlement complexity		0.003		0.004		-0.006
		(0.007)		(0.006)		(0.012)
		[0.004]		[0.004]		[0.008]
Jurisdictional hierarchy		0.002		0.002		-0.000
		(0.005)		(0.005)		(0.010)
		[0.006]		[0.005]		[0.012]
Historical latitude (abs.)		0.002		0.002		0.004
		(0.001)		(0.001)		(0.003)*
		[0.002]		[0.002]		[0.003]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.19	0.21	0.18	0.21	0.14	0.13
Oster δ		3.23		4.51		3.77
Mean of dependent var	0.59	0.59	0.57	0.57	0.72	0.72
SD of dependent var	0.16	0.15	0.16	0.15	0.28	0.28
Adj. R-squared	0.54	0.54	0.53	0.53	0.33	0.33
Number of Obs.	852	830	852	830	852	830
Number of Countries	131	130	131	130	131	130
Number of Clusters	131	130	131	130	131	130

Note. The unit of observation is a society from the *Ethnographic Atlas*. The dependent variable is the share of culture-of-honor-related terms tagged in a society's folklore by Michalopoulos and Xue (2021). The dependent variable in columns (1) and (2) is the share of all terms related to violence/deterrence or punishment/revenge. In columns (3) and (4), the dependent variable is the share of terms related to violence/deterrence and in columns (5) and (6), it is the share of terms related to punishment/revenge. Standard errors in parentheses are clustered at the country level. Standard errors in square brackets are clustered at the language phylum level (i.e., largest language family) as defined in the *Ethnographic Atlas*. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

Table A41: Culture-of-honor related folklores in Ethnographic Atlas societies weighted by log number of motifs

	Dependent variable:					
	Share of words related to ... that appear in group's folklore					
	Violence/Deterrence/ Punishment/Revenge		Violence/Deterrence		Punishment/Revenge	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	0.174	0.199	0.170	0.198	0.206	0.209
	(0.036)***	(0.040)***	(0.037)***	(0.041)***	(0.057)***	(0.071)***
	[0.052]	[0.055]	[0.054]	[0.056]	[0.062]	[0.078]
ln(number of publications)	0.141	0.141	0.136	0.136	0.172	0.172
	(0.010)***	(0.010)***	(0.010)***	(0.010)***	(0.019)***	(0.020)***
	[0.010]	[0.010]	[0.011]	[0.010]	[0.023]	[0.024]
ln(year of first publication)	1.620	1.680	1.662	1.748	1.346	1.243
	(0.676)**	(0.805)**	(0.697)**	(0.836)**	(0.991)	(1.175)
	[0.449]	[0.501]	[0.491]	[0.555]	[0.783]	[0.889]
Settlement complexity		0.003		0.004		-0.004
		(0.005)		(0.005)		(0.009)
		[0.004]		[0.003]		[0.008]
Jurisdictional hierarchy		0.000		0.001		-0.003
		(0.005)		(0.005)		(0.010)
		[0.006]		[0.006]		[0.009]
Historical latitude (abs.)		0.002		0.002		0.004
		(0.001)**		(0.001)		(0.002)*
		[0.002]		[0.002]		[0.002]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.15	0.17	0.15	0.18	0.12	0.12
Oster δ		3.04		3.65		3.71
Mean of dependent var	0.51	0.50	0.49	0.49	0.62	0.62
SD of dependent var	0.22	0.22	0.21	0.21	0.34	0.34
Adj. R-squared	0.60	0.61	0.60	0.60	0.40	0.41
Number of Obs.	1,135	1,107	1,135	1,107	1,135	1,107
Number of Countries	149	148	149	148	149	148
Number of Clusters	149	148	149	148	149	148

Note. The unit of observation is a society from the *Ethnographic Atlas*. The dependent variable is the share of culture-of-honor-related terms tagged in a society's folklore by Michalopoulos and Xue (2021). The dependent variable in columns (1) and (2) is the share of all terms related to violence/deterrence or punishment/revenge. In columns (3) and (4), the dependent variable is the share of terms related to violence/deterrence and in columns (5) and (6), it is the share of terms related to punishment/revenge. Standard errors in parentheses are clustered at the country level. Standard errors in square brackets are clustered at the language phylum level (i.e., largest language family) as defined in the *Ethnographic Atlas*. The regressions are weighted by the log of the number of motifs in the society.

Table A42: Culture-of-honor related folklores in Ethnographic Atlas societies, GPT labeling

	Dependent variable: Share of folklore motifs related to ...					
	Violence/Deterrence/ Punishment/Revenge		Violence/Deterrence		Punishment/Revenge	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependence on herding	0.079	0.088	0.069	0.071	0.068	0.081
	(0.029)***	(0.032)***	(0.034)**	(0.036)**	(0.025)***	(0.026)***
	[0.030]	[0.030]	[0.030]	[0.031]	[0.030]	[0.031]
ln(number of publications)	0.015	0.012	0.014	0.011	0.010	0.009
	(0.008)*	(0.009)	(0.010)	(0.011)	(0.006)	(0.007)
	[0.006]	[0.007]	[0.008]	[0.009]	[0.006]	[0.007]
ln(year of first publication)	-0.470	-0.749	-0.351	-0.732	-0.162	-0.275
	(0.479)	(0.531)	(0.514)	(0.550)	(0.379)	(0.435)
	[0.590]	[0.696]	[0.600]	[0.687]	[0.416]	[0.503]
Settlement complexity		0.002		0.000		0.001
		(0.003)		(0.002)		(0.002)
		[0.002]		[0.002]		[0.002]
Jurisdictional hierarchy		-0.006		-0.006		-0.005
		(0.004)		(0.004)		(0.003)
		[0.003]		[0.003]		[0.003]
Historical latitude (abs.)		0.001		0.000		0.000
		(0.001)		(0.001)		(0.001)
		[0.001]		[0.001]		[0.001]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Beta coef. for Herding	0.13	0.15	0.13	0.13	0.17	0.20
Oster δ		-5.69		6.25		11.5
Mean of dependent var	0.37	0.37	0.30	0.30	0.18	0.17
SD of dependent var	0.11	0.11	0.10	0.10	0.076	0.076
Adj. R-squared	0.39	0.40	0.29	0.30	0.35	0.36
Number of Obs.	1,135	1,107	1,135	1,107	1,135	1,107
Number of Countries	149	148	149	148	149	148
Number of Clusters	149	148	149	148	149	148

Note. The unit of observation is a society from the *Ethnographic Atlas*. The dependent variables are the share of motifs in a society's folklore that are related to culture-of-honor concepts. Standard errors in parentheses are clustered at the country level. Standard errors in square brackets are clustered at the language phylum level (i.e., largest language family) as defined in the *Ethnographic Atlas*. The Oster (2019) tests are with reference to a baseline specification that only includes country fixed effects.

B. Data description for the conflict analysis

a. Contemporary conflict data

Our measures of contemporary conflict are from two sources of geocoded data: the *Uppsala Conflict Data Program* (UCDP) and the *Armed Conflict Location and Event Data Project* (ACLED). The UCDP data has global coverage and spans a longer time period. The ACLED data is limited to Africa for a shorter period, but it is more comprehensive in terms of small-scale conflicts and provides textual descriptions of the events.

Global conflict data from UCDP We use data from the *Uppsala Conflict Data Program* (UCDP) to construct measures of contemporary conflict at the *Ethnologue* language group level. We use the *UCDP Georeferenced Event Dataset (GED) Global version 17.1*, which covers the whole world (with the exception of Syria) for the period 1989–2016. This dataset is UCDP's most disaggregated dataset, covering individual events of organized violence (phenomena of lethal violence occurring at a given time and place). These events are sufficiently fine-grained to be geo-coded down to the level of individual villages, with temporal durations disaggregated to single, individual days. The dataset provides information on the names of the two actors involved in each conflict event in variables *side_a* and *side_b*. We code an event as a civil conflict if one of the actors involve the government of a given state (identified by the key word "*Government*"). We code an event as a non-civil conflict if neither of the two actors is the government of a given state. We exclude events in which both actors are state governments.[37]

We provide the definition and examples of entries in the dataset for each type of conflict.

- **All conflict**: This includes both civil and non-civil conflicts.
- **Civil conflict**: either the variable *side_a* or *side_b* contains the word "*Government*".
  - Side A: the Government of Somalia; Side B: Somali National Movement (SNM); Starting date: January 6, 1991; Ending date: January 6, 1991; Location: Woqooyi Galbeed region; Country: Somalia; Deaths (side A): 100; Deaths (side B): 0.
  - Side A: the Government of Azerbaijan; Side B: Republic of Nagorno-Karabakh; Starting date: January 25, 1994; Ending date: January 25, 1994; Location: Kelbajar rayon; Country: Azerbaijan; Deaths (side A): 70; Deaths (side B): 4.
  - Side A: the Government of Sudan; Side B: Darfur Joint Resistance Forces; Starting date: June 27, 2014; Ending date: June 28, 2014; Location: Kutum district; Country: Sudan; Deaths (side A): 10; Deaths (side B): 13.
  - Side A: the Government of Georgia; Side B: Republic of Abkhazia; Starting date: September 1, 1992; Ending date: September 1, 1992; Location: Sukhumi town; Country: Georgia; Deaths (side A): 15; Deaths (side B): 60.
- **Non-civil conflict:** neither the variable *side_a* nor *side_b* contains the word "*Government*".
  - Side A: Fulani; Side B: Tiv; Starting date: December 19, 2016; Ending date: December 19, 2016; Location: Gassol lga; Country: Nigeria; Deaths (civilians): 11.
  - Side A: Afar; Side B: Issa; Starting date: November 15, 2022; Ending date: December 10, 2002; Location: Gewane; Country: Ethiopia; Deaths (civilians): 30.
  - Side A: Al-Maraziq; Side B: Al-Saida; Starting date: November 23, 2004; Ending date: December 3, 2004; Location: al-Jawf governorate; Country: Yeman; Deaths (side A): 6; Deaths (side B): 22.
  - Side A: the National Democratic Front of Boroland (NDFB); Side B: Civilians; Starting date: July 24, 1994; Ending date: July 24, 1994; Location: Kokrajhar district; Country: India; Deaths (civilians): 69.
- **Interstate conflict:** both the variables *side_a* and *side_b* contain the word "*Government*." This category is excluded from the main analysis.

[37]The dataset also encodes each individual conflict event into one of the three types (variable *type_of_violence*): (*i*) state-based conflict, (*ii*) non-state conflict, and (*iii*) one-sided violence.

– Side A: the Government of Iraq; Side B: the Government of Kuwait; Starting date: February 25, 1991; Ending date: February 25, 1991; Location: Al Khubar town; Country: Saudi Arabia; Deaths (side A): 27.
– Side A: the Government of South Sudan; Side B: the Government of Sudan; Starting date: April 17, 2012; Ending date: April 17, 2012; Location: Southern Darfur state; Deaths (side A): 15; Deaths (side B): 7.
– Side A: the Government of Afghanistan; Side B: the Government of United Kingdom and the Government of United States of America; Starting date: October 10, 2001; Ending date: October 10, 2001; Location: Karam village; Country: Afghanistan; Deaths (civilians): 160.

In order to construct language group level measures of contemporary conflict, we first use a spatial join algorithm to match the geographic location (using the latitude and longitude) of each conflict event to shapefile polygons of the language groups in *Ethnologue*. In the second step, we aggregate all conflict events matched to each language group to calculate the total number of conflict events that took place within the boundary of a language group during the period 1989–2016. We also aggregate the total number of conflict events separately for each of the three types of conflicts.

In addition to the number of conflict events, we also construct the number of conflict deaths as an additional measures of the intensity or severity of the conflict. The number of conflict deaths is reported in the variable *best*, which gives the best (most likely) estimate of total fatalities resulting from an event. It is calculated as the sum of deaths sustained by each side of the conflict, dead civilians in the event, and deaths of persons of unknown status. We aggregate the number of deaths at the ethnic group level for all conflict events as well as for each of the three types.

African conflict data from ACLED For groups within the African continent, we are able to use data from the *Armed Conflict Location and Event Data Project* (ACLED) as an alternative source of conflict data. The database includes information on the location, date, and other characteristics of all known conflict events in Africa for the period 1997–2016. Compared to the UCDP database, ACLED data is more comprehensive when it comes to small-scale conflicts, yet has a lesser spatial and temporal coverage. We use the "*Interaction*" variable to group conflicts by the following three sub-types:

- **All Conflict** if an event is either a civil conflict, a non-civil conflict, or a within-group conflict.
- **Civil Conflict** if the *Interaction* variable takes a value between 10–17, or 20–27. These are all conflict events that involve the government military or rebels (who are seeking to replace the central government) as one of the actors.
- **Non-Civil Conflict** if the *Interaction* variable takes a value between 30–37, 40–47, 50–57, or 60–67. These are all conflict events that are not civil conflicts.
- **Within-Group** or **Localized Conflict** if the *Interaction* variable takes a value between 40–47, 50–57, or 60–67. These are all conflict events for which both actors in the conflict are geographically local and/or ethnically local groups.
- **External Conflict** if the *Interaction* variable takes a value of 18, 28, 38, 48, 58, 68, 78, 80, and 88. These are all conflict events between civilians or involving external actors (e.g., international organizations, state forces active outside of their main country of operation, private security firms and their armed employees, and hired mercenaries acting independently). This category is excluded from the main analysis.
- **Non-conflicts** if the *Interaction* variable takes a value of 70 and 77. These are events that are peaceful interactions between civilians. This category is excluded from the main analysis.

Another benefit of the ACLED data is that they provide a description of most conflict events, which allows us to perform a textual analysis to test for a relationship between herding and revenge-taking conflict. We obtain a bag-of-words that proxies whether a conflict event involves herding or revenge-taking actions. To minimize our degree of discretion with regard to the construction of the bag-of-words, we take two steps. First, we select a set of seed words that describe the key concepts. For herding concepts, we use *herding* and *herder*; for punishment and revenge concepts, we use the same set of seed words that we have used in the folklore analysis: *punish, retaliation, revenge*. Then, we follow the methodology proposed

by Michalopoulos and Xue (2021) to retrieve the top-50 list of related terms from *ConceptNet*, which gives us the following terms after dropping duplicates:[38]

1. Herding concepts: herding, sheepherding, herded, herds, herd, herder, herd instinct, cutting horse, livestock, cattle, herdsman, shepherding, sheepherder, hurd, sheep, herders, sheepdog, cows, animal husbandry, goats, sheepdogs, herdsmen, pasturing, pastoralism, shepherds, feeder cattle, ranching, bovines, dairy cattle, drover, cow pasture, domesticated animals, chianina, shearing shed, flock, dairy cows, sheep dog, shorthorn, stockbreeding, shepherd, flocks, corralling, simmental, grazing, corralled, shepherdess, roping, oxen, aberdeen angus, milking, goat herder, goatherd, bergeret, grazier, goatherds, shepherdesses, cowherd, ovis, cattleman, goat, cowman, cow, transhumant, stockman, shepard, schaefer, shepherded, bootes, sam shepard
2. Revenge concepts: retaliation, reprisal, retaliatory, talion, retaliate, reprisals, revenge, vengeance, revenges, retribution, vengeances, retaliated, revanche, retaliating, revenged, vengeful, requital, venge, avenge, payback, revengeful, revenging, revenger, vindictive, vengefulness, vengence, vendetta, avenges, vindictiveness, vengefully, retributive, avenging, qisas, retaliates, reciprocation, poetic justice, vindictively, rematch, comeuppance, avenged, vendettas, revanchist, grievances, recompense, mutual assured destruction, rematches, recrimination, redress, backlash, grievance, punish, punishes, penalize, penalise, punished, punishing, punition, punishment, penalizing, chastise, penalized, penalization, penalised, castigate, punishments, castigating, vulgar language, castigates, chastised, disciplining, punitive, chastisement, imposing sanctions, castigated, punitiveness, chastising, penality, corporal punishment, punitively, punishable, penalty, pillorying, disciplinary, bad behavior, scold, reprimanding, chastisements, discipline, reprimand, spanking, reprimanded, reprimands, chide, spanks, misbehaved, chasten, scolds, spank, vindication, revanchism, avenger, wreak, unavenged, rematched

We constructed two indicators at the conflict event level: one for the mentioning of herding concepts and the other for the mentioning of revenge concepts. From the 139,485 events in the ACLED database, we identified 3,012 events that involved herders and 1,973 events that involved revenge-taking actions. We aggregate the frequency of revenge-taking conflict at the language group level for *all*, *civil*, *non-civil*, and *localized* conflicts.

Chat-GPT revenge variable construction

We create an alternative revenge identifier for conflicts in ACLED using the most recent (at the time of writing) GPT-4o model to identify whether a conflict event description explicitly referenced acts of revenge. Each conflict event was individually processed using a specifically crafted prompt to detect its relevance to these concepts. The prompt, which was carefully tested and refined to ensure that it would only label an event as true when the reference to the concept was explicit and direct, thereby enhancing the model's performance, was as follows: "*The following is a description of a motif from folklore. Title: {title}. Description: {description}. Please determine whether the motif references any of the following concepts: violence/deterrence, revenge/punishment. Note that not all motifs relate to these concepts, and some may relate to multiple concepts. Violence/Deterrence: (True/False). Revenge/Punishment: (True/False). Only return 2 result bool values separated by a space.*" To ensure the robustness and consistency of the labeling process, each event description was labeled ten times using the same prompt. We code a conflict as referencing acts of revenge if GPT identifies it as such at least 5 out of 10 times.

Chat-GPT herding variable construction

We also create an alternative herding identifier for conflicts in ACLED using the GPT-4o model to identify whether a conflict event description explicitly referenced herding activities. Each conflict event was individually processed using the following prompt: "*The following is a description of a motif from folklore. Title: {title}. Description: {description}. Please determine whether the motif references the concept of herding. Herding: (True/False). Only return 1 result bool value.*" Consistent with the previous process, each event

[38]There are more terms than in our folklore analysis because here we do not restrict the list to concepts that also appear the folklore catalogue.

description was labeled ten times using the same prompt, and we coded a conflict as referencing herding activities GPT identifies it as such at least 5 out of 10 times.

b. Dependence on herding

Historical dependence on herding is constructed based on the *Ethnographic Atlas* (EA) data. We first create an index based on variable "v4," which measures an ethnic group's traditional dependence on animal husbandry for subsistence. The original variable is a 10-point scale representing intervals from "0-5% dependence" at the lower end to "86-100% dependence" at the upper end. We take the midpoint of each range and divide by 100. We then use variable "v40" to create an indicator for whether or not the predominant type of animal was suitable for herding. This is equal to 1 for "sheep and/or goats," "equine animals," "camels, alpacas, or llamas," and "bovine animals." It is equal to 0 for the absence or near absence of large domesticated animals and for "pigs the only large animal." Historical dependence on herding is then calculated as the product of the two variables, yielding an 11-point scale ranging from 0 to 0.92.

c. Baseline covariates

- **Settlement complexity** The ordinary variable ranging from 1 to 8 is from "*v30*" in the EA. Each ethnic group is categorized into one of the following categories describing their pattern of settlement: (1) nomadic or fully migratory, (2) semi-nomadic, (3) semi-sedentary, (4) compact but not permanent settlements, (5) neighborhoods of dispersed family homesteads, (6) separate hamlets forming a single community, (7) compact and relatively permanent settlements, and (8) complex settlements
- **Jurisdictional hierarchy** We use the number of jurisdictional hierarchies beyond the local community to quantify the pre-industrial political sophistication of an ethnic group. The original measure, taken from the variable "*v33*" of the Ethnographic Atlas, takes on the values of 1 to 5, with 1 indicating no levels of hierarchy beyond the local community and 5 indicating four levels.
- **Historical latitude (abs.)** The historical latitude variable is from "*v104*" in the EA. We take the absolute value of the latitude to capture the distance from the equator.
- **Population density (ln)** Population density is computed for 2006 using the grid-cell level population estimates from *Landscan*.
- **Ethnic fractionalization** The measure of ethnic fractionalization is constructed in the following way: For each language group, we first generate a 500 km radius circle centered at its centroid. Letting n_i be the share of the i-th language group (in terms of population) within the circle such that $\sum_i n_i = 1$, fractionalization is defined as $F = 1 - \sum_i n_i^2$. It captures the degree to which the circle is split into distinct groups.
- **Ethnic polarization** The measure of ethnic fractionalization is constructed in the following way: For each language group, we first generate a 500 km radius circle centered at its centroid. Letting n_i be the share of the i-th language group (in terms of population) within the circle such that $\sum_i n_i = 1$, polarization is defined as $\sum n_i^2(1 - n_i)$ and it captures how far the distribution of ethnic groups is away from the bipolar (1/2, 0, ..., 0, 1/2) distribution.
- **Nighttime lights** Nighttime light density is the average luminosity across pixels that fall within a language group's polygon. We use the values in 2006. Source: Available at `https://ngdc.noaa.gov/eog/dmsp/downloadV4composites.html`
- **Share of land for herding** The variable is constructed based on data from the ESA CCI/C3S Land Cover map for the year 1992. The share of land for herding is the percentage of land within a language group's polygon that is covered by shrubland (class code: 120, 121, 122), herbgrass (class code: 110, 130), or sparse land (class code: 150, 151, 152, 153). Source: Harper, Lamarche, Hartley, Peylin, Ottlé, Bastrikov, San Martín, Bohnenstengel, Kirches, Boettcher, Shevchuk, Brockmann and Defourny (2023), available at `https://maps.elie.ucl.ac.be/CCI/viewer/download.php`
- **Ruggedness** We construct a measure of average land ruggedness at the country-language group level following the procedure suggested by Nunn and Puga (2012). We first compute the ruggedness index at the grid cell level, which is defined as "the square root of the sum of the squared differences in elevation between one central grid cell and the eight adjacent cells" (Riley, DeGloria and Elliot, 1999). The data for elevation (meters) are from GTOPO30, a "global digital elevation model (DEM)

with a horizontal grid spacing of 30 arc seconds," which can be accessed at: `https://lta.cr.usgs.gov/GTOPO30`. We then take the grid-cell level ruggedness index and aggregate the average land ruggedness within each of the country-language group polygons in the *Ethnologue* shapefile.

d. Additional controls (for Tables A9–A11 and Tables A14–A17)

- **Distance to capital (ln)** Distance to the capital city of the country is calculated as the minimum distance in kilometers from the boundary of the language group to the capital city of the country.
- **Distance to country border (ln)** Distance to the country border is calculated as the minimum distance in meters from the boundary of the language group to the country border. The shapefile of the country borders is from the World Administrative Boundaries database.
- **Distance to coastline (ln)** Distance to the coastline is calculated as the minimum distance in meters from the boundary of the language group to the coastline. The shapefile of the coastline is from the Global Self-consistent Hierarchical High-resolution Geography (GSHHG), version 2.3.7., which can be accessed at: `https://www.ngdc.noaa.gov/mgg/shorelines/`.
- **On or cross a major river** The indicator variable takes the value of 1 if the language group's polygon intersects with a permanent major river. The shapefile of permanent major rivers is from the Global Self-consistent Hierarchical High-resolution Geography (GSHHG), version 2.3.7., which can be accessed at: `https://www.ngdc.noaa.gov/mgg/shorelines/`.
- **Tsetse suitability index** This variable is from (Alsan, 2015), who models the steady-state population of tsetse flies based on their physiology as a function of historical temperature and humidity data. The variable is constructed at the ethnic group level.
- **Temperature (mean and SD)** The mean and standard deviation of temperature across the 1989–2016 period for the globe (and the 1997–2016 period for Africa) are calculated using data from GHCN CAMS, accessed at `https://psl.noaa.gov/data/gridded/data.ghcncams.html`. The original data is at 0.5×0.5 degree resolution. We first calculate the average temperature within each group's polygon and then take the mean and standard deviation across time.
- **Precipitation (mean and SD)** The mean and standard deviation of precipitation across the 1989–2016 period for the globe (and the 1997–2016 period for Africa) are calculated using data from GPCC, accessed at `https://psl.noaa.gov/data/gridded/data.gpcc.html`. The original data is at 0.25×0.25 degree resolution. We first calculate the average precipitation within each group's polygon and then take the mean and standard deviation across time.
- **Nomadic indicator** The indicator variable takes the value of 1 if the EA variable *settlement pattern* ("*v30*") is nomadic (*1*) or seminomadic (*2*).
- **Semi-sedentary indicator** The indicator variable takes the value of 1 if the EA variable *settlement pattern* ("*v30*") is semisendentary (*3*) or compact but not permanent settlement (*4*).
- **Former slavery** The indicator variable takes the value of 1 if the EA variable *former presence of slavery* ("*v71*") is present in the past but not current (*2*) or present currently and in the past (*3*).
- **Excluded from state power** The indicator variable measuring whether an ethnic group is excluded from state power is coded from the Ethnic Power Relations (EPR) Core Dataset Family 2021 (Vogt, Bormann, Rüegger, Cederman, Hunziker, and Girardin, 2015), accessed at `https://icr.ethz.ch/data/epr/`. It takes the value of 1 if the "status" variable of the ethnic group is "POWERLESS," "DISCRIMINATED," or "SELF_EXCLUSION" in any of the years 1989–2016.
- **Ethnic segregation** For each language group, we first generate a 500km radius circle centered at its centroid. We define regions of the circle as the 1×1 degree cells contained within the circle. Let T be the total population of the circle, t_j be the population of region j, J be the total number of regions in the circle, M be the total number of language groups in the circle, π_{jm} be the fraction of language group m in region j, and π_m be the fraction of language group m in the circle. The segregation index for the centered language group i is defined as: $S = \frac{1}{M-1} \sum_m \sum_j \frac{t_j}{T} \frac{\pi_{jm} - \pi_m}{\pi_m}$.
- **Share of cropland** The variable is constructed based on data from the ESA CCI/C3S Land Cover map for the year 1992. It measures the percentage of land within a language group's polygon that is covered by crops (class code: 10, 11, 12, 20, 30). Source: Harper et al. (2023), available at `https://maps.elie.ucl.ac.be/CCI/viewer/download.php`

- **Share of urban areas** The variable is constructed based on data from the ESA CCI/C3S Land Cover map for the year 1992. It measures the percentage of land within a language group's polygon that is urban (class code: 190). Source: Harper et al. (2023), available at `https://maps.elie.ucl.ac.be/CCI/viewer/download.php`
- **Share of main religious denominations** The variables are coded from the World Religion Database, accessed at `https://hub.arcgis.com/datasets/nga::religion/about`. This database provides information on the main religious denominations for each subnational region. For each language group's geographic area, we calculate the share of the population adhering to each of the following religious denominations for the global sample: Christians, Muslims, Hindus, Buddhists, Jews, and agnostics, with the excluded group comprising all other religious denominations. For the Africa sample, we calculate the share of population adhering to Christians and Muslims only because the other religious denominations have no within-country variation.
- **Religious fractionalization** The variable is coded from the World Religion Database, available at `https://hub.arcgis.com/datasets/nga::religion/about`. Letting n_i be the share of the i-th religious denomination (in terms of population) within a language group's polygon such that $\sum_i n_i = 1$, fractionalization is defined as $F = 1 - \sum_i n_i^2$. It captures the degree to which the language group is split into distinct religious denominations.
- **Religious polarization** The variable is coded from the World Religion Database, available at `https://hub.arcgis.com/datasets/nga::religion/about`. Letting n_i be the share of the i-th religious denomination (in terms of population) within a language group's polygon such that $\sum_i n_i = 1$, polarization is defined as $\sum n_i^2(1 - n_i)$ and it captures how far the distribution of religious denominations is away from the bipolar (1/2, 0, ..., 0, 1/2) distribution.

e. Other Ethnographic Atlas Characteristics (for Tables A12 and A18)

- **Jurisd. hierarchy beyond local, 1-5** The variable is from the EA variable *Jurisdictional hierarchy beyond local community* ("*v33*"). It takes the value of 1–5 if the jurisdictional hierarchy beyond the local community is absent, two levels, three levels, or four levels.
- **Political centralization, 0/1** The indicator variable takes the value of 1 if the EA variable *Jurisdictional hierarchy beyond local community* ("*v33*") is larger chiefdoms (*3*), states (*4*), or large states (*5*).
- **Jurisd. hierarchy local, 1-3** The variable is from the EA variable *Jurisdictional hierarchy of local community* ("*v32*"). It takes the value of 1 if the jurisdictional hierarchy of local community is two levels, 2 if it is three levels, and 3 if it is four levels.
- **Headman elected, 0/1** The indicator variable takes the value of 1 if the EA variable *political succession* (*v72*) is through election (*6*).
- **Property rights in land, 0/1** The indicator variable takes the value of 1 if the EA variable *real property inheritance rule* (*v74*) is not *absent* (*2–7*).
- **Single inheritor for land, 0/1** The indicator variable takes the value of 1 if the EA variable *real property (land) inheritance distribution* (*v75*) is *Exclusively or predominantly to the one adjudged best qualified* (2), *Ultimogeniture (to the junior individual)* (3), or *Primogeniture (to the senior individual)* (4).
- **Institutional characteristics (PCA)** We construct a principal component index of institutional characteristics based on each category of the following EA variables: Jurisdictional hierarchy of local community (*v32*), Jurisdictional hierarchy beyond local community (*v33*), political succession (*v72*), real property inheritance rule (*v74*), and real property inheritance distribution (*v75*).
- **Patrilineality, 0/1** The indicator variable takes the value of 1 if the EA variable *major descent type* (*v43*) is patrilineal (*1*).
- **Matrilineality, 0/1** The indicator variable takes the value of 1 if the EA variable *major descent type* (*v43*) is matrilineal (*3*).
- **Patrilocality, 0/1** The indicator variable takes the value of 1 if the EA variable *marital residence* (*v12*) is patrilocal (*8*).
- **Matrilocality, 0/1** The indicator variable takes the value of 1 if the EA variable *marital residence* (*v12*) is matrilocal (*5*).

- **Polygyny, 0/1** The indicator variable takes the value of 1 if the EA variable *marital composition* (*v9*) is not independent nuclear (*3–7*).
- **Clan communities, 0/1** The indicator variable takes the value of 1 if the EA variable *Community marriage organization* (*v15*) is *clan communities* (*6*)
- **Kinship tightness, 0-1** The continuous variable ranging from 0 to 1 is coded following the procedure described in Enke (2019a). It is defined as the average of four indicator variables: extended family (*v8==1,2*), joint residence (*v11==1,3*), unilineal descent (*v43==6*), and clans (*v15==2, 5, 6*).
- **Cousin marriage, 0/1** The indicator variable takes the value of 1 if the EA variable *cousin marriage* (v24) is present (*1–7*).
- **Bride price, 0/1** The indicator variable takes the value of 1 if the EA variable *Mode of marriage* (*v6*) is bride price (*1*).
- **Female participation in agriculture, 1-6** The ordinal variable ranging from 1–6 is from the EA variable *Sex differences in agriculture* (*v6*).
- **Settlement complexity, 1-8** The ordinary variable ranging from 1 to 8 is from "*v30*" in the EA.
- **Historical latitude (abs.)** The historical latitude variable is from "*v104*" in the EA. We take the absolute value of the latitude to capture the distance from the equator.
- **Nomadic, 0/1** The indicator variable takes the value of 1 if the EA variable *settlement complexity* ("*v30*") is nomadic (*1*) or seminomadic (*2*).
- **Semi-sedentary, 0/1** The indicator variable takes the value of 1 if the EA variable *settlement complexity* ("*v30*") is semisendentary (*3*) or compact but not permanent settlement (*4*).
- **Former slavery, 0/1** The indicator variable takes the value of 1 if the EA variable *former presence of slavery* ("*v71*") is present in the past but not current (*2*) or present currently and in the past (*3*).
- **High Gods Moral, 0/1** The indicator variable takes the value of 1 if the EA variable *High Gods* (*v34*) is *Supportive of human morality* (*4*).

f. Transhumant pastoralism variables (for Tables A31–A34)

- **Transhumant and non-transhumant herding** The measure of transhumance is derived from the EA variable *v30*, which describes settlement patterns. It takes the value of one if settlement patterns are "*nomadic or fully migratory (1)*", "*seminomadic (2),*" "*semisedentary (3)*" or "*compact but not permanent settlements (4).*" Transhumant herding is defined as the product of transhumance and historical dependence on herding, while non-transhumant herding is defined as the product of non-transhumance and historical dependence on herding.
- **Neighbor's Transhumant Pastoralism** We follow McGuirk and Nunn (2025) to create two measures of transhumance based on the EA variable *v30*: a narrow definition that includes only groups classified as "*(1) nomadic or fully migratory*" or "*(2) seminomadic*," and a "broad" measure that also includes groups defined as "*(3) semisedentary*" or those with "*(4) compact but not permanent settlements*." The variants differ in whether semi-mobile groups are coded as transhumant. Transhumant pastoralism (THP) is defined as the product of (i) the transhumance indicator and (ii) the historical dependence on herding variable. We create six different measures of neighbors' transhumant pastoralism: (1) the average THP of all neighbors; (2) the maximum THP of all neighbors; (3) an indicator that takes the value of one if any neighbor's THP exceeds 0.15; (4) an indicator that takes the value of one if any neighbor's THP exceeds 0.35; (5) an indicator that takes the value of one if any neighbor's THP exceeds 0.55; and (6) an indicator that takes the value of one if any neighbor's THP exceeds 0.75.

C. Data description for GPS analysis

a. Data construction

For the analysis, we link the contemporary individual-level GPS data to the historical ethnographic data using the region of residence of the respondent in the GPS and district-level measures of the ethnographic data which are taken from the *Ancestral Characteristics Database* (ACD) (Giuliano and Nunn, 2018).[39] To

[39]The version we use is the extension that includes Easternmost Europe, Siberia and the World Ethnographic Sample. The results are similar using any other version of their data.

construct the ACD, Giuliano and Nunn (2018) first combine the grid-cell level population estimates from *Landscan* and the shapefile of the language groups in *Ethnologue* to associate each grid cell to a specific language group in *Ethnologue*. Next, they calculate the average ancestral characteristics of populations in each subnational region using the shapefile of global administrative boundaries provided by ESRI. The ancestral traits are taken from *Ethnographic Atlas*, and Giuliano and Nunn (2018) manually matched them to the language groups in *Ethnologue*.

However, the regions reported in ACD do not overlap exactly with those in the GPS data. Because the GPS does not include shapefiles at the subnational level, we manually link regions in the GPS data to regions in the ACD by combining various sources of information, taking into account potential name changes and merges and splits. The GPS data report 1,146 distinct regions. Of these, 823 regions in the ACD (72%) match exactly. For 246 GPS regions (21%), the GPS regions are smaller than the ACD regions. For these, the measures from the larger ACD region are used. For 44 of the GPS regions (3.8%), the GPS region is larger than the ACD region. For these, we use the same methodology as in Giuliano and Nunn (2018) to construct ethnographic measures at the larger GPS region level. Lastly, for 33 GPS regions (2.9%), the GPS regions did not nest the ACD regions or vice versa, so a clean match was not possible. We omit these regions from the analysis. In doing so, we obtain 951 subnational regions over which the dependence on herding is cleanly defined.

b. Definitions of variables

- **Psychology of punishment.** We use the individual-level data from the Global Preference Survey (GPS) to measure psychology of punishment. The measure is constructed by Falk et al. (2018) as a weighted average of three questions that elicits people's propensity for altruistic punishment and for second-party punishment, each rated on a scale of 1 to 10. The questions are: (i) how willing are you to punish someone who treats others unfairly, even if there may be costs for you? (ii) how willing are you to punish someone who treats you unfairly, even if there may be costs for you? (iii) if I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so. The measure is normalized to have mean 0 and standard deviation 1. For robustness, we also use the responses to these three questions separately.
- **Age.** The age of the respondent is measured in years and is from the GPS individual level dataset. This variable is included as a control in our individual level analysis of psychology of punishment.
- **Female indicator.** An indicator for female respondent is included in the GPS individual level dataset. This variable is included as a control in our individual level analysis of psychology of punishment.
- **Subjective cognitive skills.** We measure subjective cognitive skills using the respondent's self-assessment of math skills, which is included in the GPS individual-level dataset. The question is: *"How well do the following statement describe you as a person? — I am good at math."* The measure takes values from 0 to 10, with 0 means *"does not describe me at all"* and 10 means *"describes me perfectly"*. This variable is included as a control in our individual level analysis of psychology of punishment.
- **Education level.** The measure of the respondent's education level is taken from *Gallup World Poll 2012*, which can be linked to the GPS individual level dataset using the personal identifiers contained in both data. The measure takes four values: (1) completed elementary education or less (up to 8 years of basic education), (2) Secondary - 3 year tertiary education and some education beyond secondary education (9–15 years of education), and (3) completed four years of education beyond high school and / or received a 4-year college degree. This variable is included as a control in our individual level analysis of psychology of punishment.
- **Household income.** The measure of household income per capita is taken from *Gallup World Poll 2012*, which can be linked to the GPS individual level dataset using the personal identifiers contained in both data. The respondents are asked to report their household income in local currency. The measure is constructed by converting local currency to international Dollars (ID) using purchasing power parity (PPP) ratios. Log household income is computed as ln(1+household income). This variable is included as a control in our individual level analysis of psychology of punishment.

D. Data description for Folklore analysis

a. Data construction

We follow Michalopoulos and Xue (2019, 2021) in quantifying ethnic groups' cultural beliefs and practices using textual data on folklore. The anthropologist and folklorist Yuri Berezkin assembled a dataset that codes the presence of 2,564 motifs across nearly 1,000 ethnolinguistic groups. A motif reflects a combination of images, episodes, or structural elements found in two or more texts.[40] The data are designed to capture a society's traditional beliefs, customs and culture as they are transmitted from generation to generation through word-of-mouth, often in the form of folktales and narratives.[41] Based on this catalog of motifs, Michalopoulos and Xue (2019, 2021) use text analyses to construct a folklore dataset. For a large number of economic, psychological, and cultural concepts, this dataset codes whether a given concept appears in a given motif.[42] In these text analyses, a concept is said to appear in a motif if the text mentions either the seed word itself or one of the 50 most closely related terms according to the knowledge representation project ConceptNet.[43] Based on this approach, the authors construct the intensity of each concept in the folklore of a given group.

Most importantly for our purposes, the data contain many concepts that are related to the culture of honor hypothesis. Michalopoulos and Xue (2019) study the association between herding and a culture of honor by examining words associated with 'anger' and 'retaliation'. Following the same basic logic, we first selected all seeds words that Nisbett and Cohen (1996) used to introduce the idea of a culture of honor. These are:

1. Violence and deterrence concepts: violence, perpetrator, strength, toughness, predation, predator, aggressiveness, affront, deterrence, defend, mayhem, guard.
2. Punishment and revenge concepts: punishment, punish, penalty, revenge, retaliate, retaliation.

For each seed word, we retrieve the top-50 list of related terms from ConceptNet. We then select concepts from the folklore catalogue by Michalopoulos and Xue (2019) that appear in the top-50 list of our seed words, finding the following terms:

1. Violence and conflict concepts: power, strong, crime, tough, violence, victim, threat, conflict, strength, violent, aggressive, hunter, habitat, intensity, courage, weakness, chaos, aggression, offender, predator, insult, riot, thief, prey, offend, outrage, aggressively, grit, endurance, coyote, perpetrator, attacker, vitality, brutality, unrest, culprit, victimization, humiliate, robber, vigor, rapist, resilience, nonviolent, abuser, predatory, disgrace, defense, security, protect, guard, protection, defend, disorder, mess, strategic, defensive, assert, confusion, prevention, protective, discourage, defender, uphold, guardian, disturbance, protected, madness, safeguard, turmoil, disruption, deter, preventive, frenzy, chaotic, bodyguard, lineman, warden, fend, upheaval, persuasion, havoc, protector, deterrent, militarily.
2. Punishment and revenge concepts: retaliate, retaliation, discipline, penalty, punishment, punish, revenge, disciplinary, backlash, vengeance, grievance, punitive, scold.

[40] As described in detail in Michalopoulos and Xue (2019, 2021), Berezkin constructed this dataset by consulting a large number of books and journal articles. These primary sources were written by anthropologists, adventurers and missionaries who had visited an ethnolinguistic group. Berezkin systematized these accounts into a consistent catalog. Each motif in Berezkin's catalogue is associated with a title and a short description of an image or an episode. These can be analyzed using text analyses. The median group in Berezkin's data has 62 motifs, and there is large variation across groups in which types of motifs appear in the records.

[41] A potential concern that the data are more reflective of the biases of the individual who coded the primary sources rather than of the genuine folklore of a group. To address this concern, Michalopoulos and Xue (2019, 2021) extensively validate the catalog by documenting that the presence of objectively verifiable motifs is strongly correlated with real circumstances. For example, the presence of earthquake-related motifs is significantly higher in earthquake regions. Similar associations are found for other environmentally-determined variables such the presence of storms and lightnings, or information about different modes of economic production.

[42] The data are available at: `https://sites.google.com/site/steliosecon/folklore-catalogue?authuser=0`

[43] ConceptNet originated from the MIT Media Lab. To construct a ConcenpNet-based list of related terms Michalopoulos and Xue (2019, 2021) retrieve the top-50 list for each seed word.

For each of the concepts, we generate a binary indicator that equals one if the concept appears in the folklore of an ethnic group. We then average across all concepts within a given domain (violence/ deterrence and psychology of punishment/ revenge) to arrive at a summary measure that captures the fraction of concepts in the domain that are present in a society's folklore. In addition to measures for both domains, we also compute an overall summary measure of a culture of honor by taking the average across all concepts.

b. Chat-GPT folklore analysis

Specifically, the prompt is: "*The following is a description of a motif from folklore. Title: {title}. Description: {description}. Please determine whether the motif references any of the following concepts: violence/deterrence, revenge/punishment. Note that not all motifs relate to these concepts, and some may relate to multiple concepts. Violence/Deterrence: (True/False). Revenge/Punishment: (True/False). Only return 2 result bool values separated by a space.*" Given GPT's stochasticity, we run each prompt 10 times and then count a concept as appearing in a given motif if GPT identifies it as such at least 5 out of 10 times. GPT exhibits very high consistency across runs in this task, with 80% of all queries returning exactly the same response across all ten runs. Thus, the results are very similar when we instead count a concept as appearing if GPT indicates it 10/10 times.

c. Examples of revenge-related folklores

- **a38d The Sun ruins cloak:** Because the Sun does damage to a person or animal (spoils, burns his cloak, skin, etc.), the person or animal kills him or catches him in a snare
- **b117 The dogs' certificate:** The animals (usually dogs) got a certificate which was lost because of the cat (is swallowed by the cat, burned, eaten by mice). Since them dogs and cats are enemies, usually also cats and mice
- **b22 Offended person destroys the tree:** People who have climbed up a tree do not share food with a person who remained below. He or she revenges on them destroying the tree. The events have cosmic dimensions
- **b28a Pierced to the ground:** Person who have been transforming people into animals or stones is pierced to the ground with a pole
- **c11 Father avenges his son:** Person uses his supernatural powers to destroy a large group of people who have offended or insulted his son
- **e21 Avenged victim of water creatures:** Child fishes with poison or his or her body produces fish poison. Fish or water snake kills him or her. The perished child is avenged
- **i4d Thunders instrument stolen:** Thunders instrument is stolen from him. He or his helper comes unrecognized to the thief, gets his instrument and kills the enemies
- **k77a Small objects and animals defeat the ogre:** Small objects and animals (rare: animals alone but including harmless and passive ones, e.g. on the dry land fishes) revenge on a powerful enemy making attack on him in succession (usually they hide in his or her house); the enemy is badly injured, runs away or dies
- **m39e1: The eaten up iron and the kidnapped child:** A man appropriates money or property trusted to him by another. The latter has no proves but gets his property back after he or his helper puts the theft in such a position when the best choice for him becomes to return the money (usually the first man kidnaps a child of the second one)
- **m57d Beat, cudgel!:** Person first gets magic objects that bring food or treasure and after this he receives a cudgel (a whip, etc.) that beats people, usually those who have stolen the first objects. (In Greek text the stealer of magic objects is punished otherwise)