

A History of Violence:

The Culture of Honor as a Determinant of Homicide in the US South

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Abstract

According to the culture of honor hypothesis, the high prevalence of homicide in the US South originates from the settlement of the region by herders from the fringes of Britain in the 18th century. Combining contemporary homicide data with historical Census data, this paper confirms that Scot or Scots-Irish settlements are associated with higher homicide today, but only in the South. Using different proxies for institutional quality, I find that the Scots-Irish culture of honor only persisted where institutional quality was low. The interpretation is that the culture of honor, a private justice system, persisted in the South as an adaptive behavior to weak institutions. The effect is more pronounced where herding was more prevalent. It is confined to white offenders and to specific homicides that aim at the defense of one's reputation. By contrast, violent crime against women is lower. The culture of honor was transmitted to subsequent generations, but, again, only where formal institutions were weak. Evidence also suggests that the Scots-Irish culture of honor continues to adapt: its influence has been slowly fading over time.

Keywords: Cultural Persistence, Homicide, Institutions, Migration, Scots-Irish, US South

JEL codes: K42, N31, O15, Z13

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1. Introduction

Historical events have a lasting influence on economic outcomes and behavior (see Nunn 2009 for a review). The hysteresis of formal institutions has been the first and foremost explanatory factor behind such persistence (Engerman and Sokoloff 1997, Acemoglu, Johnson and Robinson 2001, Dell 2011). Recently, an emerging body of evidence has pointed to culture as another channel of persistence.¹ However, culture is a pervasive concept and still little is understood on what outcomes are influenced, how culture changes and how formal institutions and culture interact. This paper examines the origins of the cultural factors underpinning interpersonal violence and the conditions under which they have persisted.

The average homicide rate per 100,000 people in the Deep South of the United States at the beginning of the 21st century stands at 8.59, nearly three times as high as in Northern states.² This southern homicide specificity is, furthermore, a white offender phenomenon,³ which this paper traces back to specific historical cultural and institutional conditions in the US South. The 18th century US witnessed a large influx of settlers from Ulster - the so-called Scots-Irish- and from the Scottish Highlands, two traditionally pastoral and lawless areas that were among the most violent of Europe (O'Donnell 2005, Roth 2009). Cultures of honor, which rely heavily on aggression and male honor, are common adaptations among populations living in stateless regions and that depend upon easily stolen herds (Braudel 1949, Pigliaru 1959, Edgerton 1992, Pitt-Rivers 1996).⁴ A herder's livelihood is precarious in a way that a farmer's is not: he can easily lose most of his wealth through theft. In the absence of third party law enforcement, aggression and a willingness to kill can be essential to build a reputation for toughness and deter animal theft. In a famous and debated hypothesis, Nisbett and Cohen (1996) argues that the root of the Southern culture of honor lies precisely in the settlement of the South of the US by Scots and Scots-Irish herders.

Combining contemporary homicide data with historical Census settlement data, I find that Scot or Scots-Irish presence contributes to higher homicide and aggravated assaults today. Consistent with the culture of honor hypothesis, the effect is specific to white

¹ Culture has been found to influence norms and beliefs such as trust (Guiso, Sapienza and Zingales 2008, Tabellini 2008a and 2008b, Algan and Cahuc 2010, Nunn and Wantchekon 2011) and behavior such as fertility (Fernandez and Fogli 2007), firm management practices (Bloom, Sadun and Van Reenen forth.) or inter-ethnic violence (Jha 2008, Voigtländer and Voth forth).

² Source: UCR. See Table 1.

³ Between 1980 and 2007, white offender rates in the Deep South were 2.8 times those in Northern states. Black offender rates were 'only' 1.4 times higher, a difference that is no longer significant since the end of the 1980s.

⁴ Edgerton (1992) describes natural experiments where two tribes living in the same region of East Africa but differing in their economic occupations display different tendency for violence and warfare. Pigliaru (1959) describes the codes of honor and the reliance on interpersonal violence among Sardinian herdsmen. Braudel (1949) recounts the reputation for violence of the mountainous herding people of the Mediterranean rim.

offenders and to a type of homicide that aims at the defense of one's reputation: between acquaintances and perpetrated with a blunt object, denoting spontaneity. However, the relationship between historical Scots-Irish presence and contemporary interpersonal violence is observed in the South only.

If the Scots-Irish culture of honor only survived in the South, the natural question is: What predicts this conditional persistence? Wyatt-Brown (2001) depicts how in the North, formal and impersonal institutions quickly became the cement of social and political order in the 19th century. By contrast, in the lawless frontier South, the Scots-Irish culture of honor, as a private justice system, may have provided the best adaptive response and become the prevailing norm. Empirical results confirm that the persistence of the Scots-Irish culture of honor is specific to areas where formal institutions were likely to be all but absent at the time of settlement of the Scots and Scot-Irish, who were the original settlers in many areas of the frontier South, and persistently weak thereafter. These are areas with low land values at the end of the 18th century, low newspaper circulation and low court quality at the beginning of the 19th century.⁵ A caveat here is cultural norms may have contributed to the persistence of inefficient institutions. Nevertheless, at the very least, the results are indicative of a correlation between the persistence of low institutional quality and the persistence of the culture of honor.

The rest of the paper is devoted to investigating what underlies cultural transmission, in order to explain why Scots-Irish settlements 200 years ago are still associated with homicide today. One mechanism is that the descendants of these settlers have internalized cultural traits consistent with a culture of honor. I test whether homicide is more prevalent today in counties with high contemporary proportions of Americans of Scots-Irish ancestry, as self-reported in the 2000 Census. This, again, is found only in the South. The interpretation is that because of institutional persistence, the institutional conditions that gave rise to the dominance of the Scots-Irish culture of honor may also underlie the transmission of such cultural norms. Accordingly, I find that Americans of Scots-Irish descent are associated with higher homicide only in areas where formal institutions were historically weak. However, the quality of institutions has improved in the South over the last 200 years, so that the influence of Scots-Irish cultural norms should also have waned. This is confirmed empirically, using historical crime data from the beginning of the 20th century and county-level data since 1980. Scots-Irish settlements explained a much more substantial part of the variation in homicide

⁵ Court quality is measured by selection and retention procedures for state judges (Berkowitz and Clay 2011).

rates at the beginning of the 20th century. The impact of the Scots-Irish culture of honor in the South has decayed at a rate of about 3.4% yearly since the beginning of the 1980s, a rate that is consistent with extrapolations to earlier historical data.

An alternative explanation for the results is that the Scots and Scots-Irish migrated to counties, the characteristics of which still lead to high prevalence of homicide. Several strategies are pursued in order to establish that the relationship between Scot or Scots-Irish settlements and homicide is causal. First, the results are robust to controlling for a large number of contemporary determinants of crime, such as poverty, inequality, racial composition, ethnic fractionalization, police numbers and budgets as well as the prevalence of other crime and offenses. The results are also robust to controlling for terrain characteristics, historical land use and agricultural output. Second, several falsification tests are performed. The positive relationship between early settlers and contemporary homicide in the South does not hold for settlers that originated from other countries. It is confined to violence related to a self-protection ethic and not to crime or violence in general. Last, the influence of unobservable factors would need to be about three times higher than observable factors to explain away the presence of Scots-Irish settlements in the South. Another interpretation of the result is that the conditional persistence of the culture of honor has nothing to do with formal institutions but is rather due to the systematic migration of only the most violent settlers to the Southern areas where historical settlements explain contemporary homicide. The absence of a relationship for other crime and for settlers of other origins strongly argues against this.

Recent studies have established the role of culture as an explanatory factor, beside the hysteresis of formal institutions, for how historical events affect present-day norms, attitudes and behavior. Guiso, Sapienza and Zingales (2008) and Tabellini (2008a) link current trust to the experience of free city states in Italy. Grosjean (2011a, 2011b) and Becker et al. (2011) relate current trust, banking practices and corruption to Ottoman and Habsburg rule in Europe. Nunn and Wantchekon (2011) roots low contemporary trust in Africa in the slave trade history. The influence of historical and cultural factors on violence has been explored in the context of inter-ethnic hostility, between Hindus and Muslims in India (Jha 2008) and against Jews in Germany (Voigtländer and Voth forth.). This paper complements this literature by showing the persistence of cultural traits pertaining to interpersonal violence. Its original contribution is to suggest that cultural persistence is conditional on the quality of formal institutions: violent local cultural norms are inheritable, but persistence vanishes in the presence of strong formal institutions. This can be explained by the fact that the development

of formal institutions, by providing alternative means of dispute adjudication and property rights' security, lowers the returns to interpersonal violence and increases its cost, as the monopolization of violence by the state goes hand in hand with the penalization of interpersonal violence (Weber 1958, Elias 1994). Another paper that suggests conditional cultural persistence is Voigtländer and Voth (forth.), which finds that persistence of anti-Semitic attitudes disappears where the cost of discriminating against outsiders is high. Others have shown that cultural norms only play a role when formal institutions are weak or lack impartiality. Fisman and Miguel (2007), in a study on parking violations committed by diplomats stationed in New York, finds that culture ceases to matter once external enforcement is imposed. Cassar, D'Adda and Grosjean (2012) shows, in an experimental setting, that cultural origins influence cheating only in the absence of impartial institutions.

A secondary contribution of this paper is to the literature on crime. In the face of the difficulty of reconciling the Southern –white offender- homicide specificity with traditional determinants such as income, institutions or drug prevalence,⁶ the role of cultural values has attracted much attention in sociology, history and psychology (Gastil 1971, Wyatt-Brown 1982 and 2001, Cohen and Nisbett 1994, Nisbett and Cohen 1996). The Nisbett-Cohen hypothesis predicts that the North-South difference in homicide is due to the greater presence of the Scots-Irish in the US South. In slight contrast, the current paper finds that the Scots-Irish culture only persisted in specific areas: in the South in particular and where formal institutions were weak in general. The conditionality of this result may explain the shortcoming of previous literature on the Nisbett-Cohen hypothesis, which has struggled to establish a robust link between, on the one hand, ecological conditions,⁷ specific groups of people or social organization⁸ taken in isolation of one another and, on the other hand, homicide. The result in this paper is, however, in accordance with the literature on the secular decline in interpersonal violence in the face of institutional development and the “civilizing process” (Elias 1994, Pinker 2011).

Section 2 provides the historical and conceptual background. Section 3 presents the data. Section 4 discusses the relationship between historical settlements and contemporary

⁶ None of the factors discussed in Levitt (2004) and Levitt and Miles (2006) -higher number of police, rising prison population, legalized abortion and receding crack epidemics- seems to apply more obviously to the North rather than the South. Moreover, their analysis is mostly focused on explaining the sharp decline of homicide rates in the 1990s, which was confined almost exclusively to black offender rates.

⁷ Chu, Rivera and Loftin (2000) question the empirical validity of the link between pastoralism and homicide discussed in Reaves (1992).

⁸ Lee et al. (2007), Rivera, Chu and Loftin (2002) and Loftin and McDowall (2003).

interpersonal violence. Section 5 analyzes the determinants of the survival of the culture of honor in the South. Section 6 investigates vertical cultural transmission. Section 7 concludes.

2. Historical background and Conceptual Framework

2.1. The Scots-Irish and Migration to America

The theory developed by Nisbett and Cohen deals with settlers from the fringes of Britain, areas not suitable for intensive farming, and most particularly the Scots-Irish. The term Scots-Irish was coined in the US in the 19th century to differentiate the Protestant –mainly Presbyterian- people from the Irish northern province of Ulster, from the Roman Catholic Irish. These people originated in the Anglo-Scot borderlands⁹ and were resettled in Ulster when James VI of Scotland became James I King of England in 1603. The objective of this “Plantation” was to bring peace to the Anglo-Scot borderland and to settle Ulster, which had been devastated by the Nine Years War (1564-1603). Political instability, religious and economic discrimination nevertheless continued after the Plantation and the Presbyterians were not treated better than the Catholics. Even after the Glorious Revolution of 1688, “the Protestant squirearchy who dominated the Irish Parliament [...] showed themselves almost as concerned by the threat of Protestant dissent and especially the Scottish Presbyterians in Ulster, as they were about popery” (Harris 2006, page 507). Things were particularly difficult in the last years of Queen Anne’s reign in the early 18th century. The 1704 English Test Act required all office-holders in Ireland to take the sacramental test. Presbyterians could no longer serve in public office or corporations. On the economic side, the Navigation Act had prohibited all exports from Ireland to the colonies and the export of Irish cattle to England since 1660. Around the turn of the century, additional restrictive economic laws were passed. In 1699, the English parliament prohibited wool or woolen goods exports from any Irish ports except Drogheda, Dublin, Waterford, Youghal, Cork and Kinsale, none of which is in Ulster. Last, the practice of rack-renting by landlords, the majority of whom were English, led to exorbitant land rents. Such religious and economic discrimination were particularly detrimental to the Presbyterians and provoked their first mass migration to the New World at the beginning of the 18th century. They first settled in New York, in Pennsylvania in 1717-1718 and by 1738, they had made their way into Virginia. Three subsequent waves of migration occurred in 1739-1740, 1754-1755 and 1771-1775. Their migration was completed over the course of the 18th century and it is estimated that over 200,000 Scots-Irish migrated

⁹ The borderlands extended from the River Cree to the North Sea on the Scottish side and from the coast of Cumberland to the coast of Northumberland on the English side.

to the Americas between 1717 and 1775. Prior to the 19th century, the vast majority of migrants from Ireland were Scots-Irish. Protestants were only one-third of the population of Ireland, but three-quarters of all emigrants leaving between 1700 and 1776 (Adamson 1982).

Other important groups of settlers around the same time were Highland Scots, driven from their homeland by the defeat of Charles Edward Stuart in 1745, as well as Germans and Dutch. As a late and impoverished arriving group, the Scots-Irish and the Highland Scots and, to a large extent, the Germans, found land in the coastal areas of the English colonies already owned or too expensive and left for the back country on “The Great Philadelphia Wagon Road”, along the Appalachian Mountains southward to the Carolinas.

2.2. Violence in the Anglo-Scot Borderlands, Ulster and America

Both Ireland and Scotland historically had high homicide rates. This can be explained by political instability, disrespect for the –English dominated- central government and the lack of a criminal law tradition (O’ Donnell 2005). Lawlessness and violence had characterized the Anglo-Scot borderlands for much of the 250 years during which Scotland and England were in open conflict with one another (roughly from 1296 to 1551). Ulster was the last Irish province to come under English domination. It had been particularly ravaged by the Nine Years War and left in a power vacuum by the Flight of The Earls in 1607. In the borderlands as in Ulster, the concept of state administered punishment for crime was foreign.¹⁰ In the absence of formal law enforcement, honor and reputation were of central importance as enforcement mechanisms of customary law (Leeson 2009).¹¹ Homicide rates in Ulster in the 1730s were around 10 per 100,000 (Roth 2009) and rates of killings in Ireland, most of which originated in interpersonal arguments and aimed at the maintenance of one’s sense of honor, were twice as high as in England until well into the 20th century (O’ Donnell 2005).

Anecdotal evidence on the ruthlessness and violence of the Scots-Irish and the Scots in the United States abound. Roth (2009) writes that the Scots and the Scots-Irish immigrants “brought their homicidal tendencies with them to North America” (page 83). He continues: “[In New England], the Scots-Irish [...] were more than twice as likely to be murdered or to commit murder as other colonists. [...] In Virginia, [...] the Scots-Irish had a reputation for

¹⁰ Early Irish law, the Brehon Law, which was a civil rather than a criminal law, had persisted in Ireland until the Norman invasions in the 12th century and in Ulster until the Tudor conquest in the 17th century. Under the Brehon law, as under customary law in the Anglo-Scot borderland, offenders in case of physical injury only had to respond to the victim or her representative.

¹¹ For example, individuals who did not conform to customary law were publicly denounced and challenged to duels, a practice called “bawling”. For an example of similar cultural codes as a response to lawlessness and banditry in a different context, see Pigliaru (1959).

extraordinary violence” (page 84). Wyatt-Brown (2001, page 73) writes that: “The Scots-Irish were more prone to personal violence and more conscious of honor than any other group then settled in the country”.¹² St John de Crevecoeur described in 1782 how: “The Irish [...] love to drink and to quarrel; they are litigious, and soon take to the gun” (St. John de Crevecoeur 1782, Letter 2). Historical crime data back this depiction. Roth (2009) reports that the Irish represented less than 4% of the population but 13% of homicide assailants in New England and Virginia between 1676 and 1800. The Scots were nearly as violent: they represented 12% of the population but 20% to 26% of homicide assailants in New England and Virginia, respectively.

2.3. Conceptual Framework: Lawlessness and Interpersonal Violence

The premise of this paper lies in the relationship between lawlessness, economic vulnerability and interpersonal violence. Violence plays an essential role for the defense and enforcement of property rights in the absence of third party enforcement.¹³ Evolutionary anthropologists view self-help justice and third party adjudication as alternative rules for dispute resolution, which belong to the set of culturally transmitted norms of behavior, that is to say pre-set behaviors that save on the cost of developing new responses to changing environments (Paciotti and Richerson 2002, Richerson and Boyd 2005). How lawlessness and economic vulnerability lead to the dominance of self-help justice and to the emergence of distinct cultural traits –the culture of honor in particular- can be explained by Elias’ (1994) idea that cultural norms reflect the social structure. Elias (1994) describes how, during the “civilizing process” of the western world, violent instincts and the inclination to solve disputes with fists, sticks, blades or guns were gradually placed under an increasingly strong social control anchored in the development and monopolization of violence by the state. Pinker (2011) provides abundant empirical support consistent with this view.

According to this interpretation, 18th century Scots-Irish and Scots were more violent than other western Europeans because Ulster and Scotland were behind in the “civilizing process” compared with other countries in which political centralization was more advanced. The conditions that settlers faced in the US South were conducive to violence for similar reasons. State controllers, such as courts and sheriffs, were weak in the Antebellum South

¹² The author refers to the time period around President Jackson’s childhood. Jackson was born in 1767, two years after his parents emigrated from county Antrim, Ulster.

¹³ Bates, Greif and Singh (2002) and Gonzales (2010), for example, model the state as but one agent specialized in the protection of property rights.

(Wyatt-Brown 2001), leaving little opportunity for individuals to resolve dispute through third-party adjudication. Besley, Persson and Sturm (2010) identifies conditions in the pre-Civil War South, which were conducive to restricted political competition and lower quality of political institutions. Berkowitz and Clay (2006, 2011) documents lower court quality in states that were colonized or settled by a country with a civil law system and in states that were members of the Confederacy during the Civil War. Roth (2009) also points to political instability during and after the Civil War as a foremost explanation for the divergence of Southern homicide patterns.¹⁴ It is argued here that the Scots-Irish culture of honor, which had emerged in the Anglo-Scot borderlands, the Scottish Highlands and Ulster as, precisely, a response to lawlessness and economic vulnerability, provided the best adaptive response in this environment of weak formal institutions. As such, it had the potential to become the prevailing cultural norm.¹⁵ Testable predictions are that the culture of honor should prevail in areas where institutions were weak, and where self-help justice had a comparative advantage, for example, because resources were more easily expropriated. Both predictions are confirmed in the empirical analysis in this paper.

A question that arises is why one still observes higher reliance on interpersonal violence in areas settled by the Scots or Scots-Irish more than 200 years ago. One explanation is that such events are actually quite recent from the point of view of cultural evolution, i.e. that the original settlers' culture has not yet fully dissipated despite changes in environmental, economic and political conditions. Cultural evolutionary models account for significant time lags between environmental and cultural changes because of hysteresis in parental transmission of values (Bisin and Verdier 2001).¹⁶ A testable hypothesis is that Americans of Scots-Irish descent should, even today, display higher levels of aggressions and a higher inclination towards self-help justice rather than centrally administered justice.

However, cultural transmission is more than cultural reproduction. In models à la Bisin and Verdier (2001), parental decisions to transmit cultural norms are determined by the payoff to alternative cultural norms in different environments. Because of institutional

¹⁴ “Wherever the Union lost control and the Confederacy failed to gain control, homicide rates rose to 100-200 per 100,000 adults per year. Those circumstances prevailed in the mountain South and in the Confederacy’s northwestern borderlands” (Roth 2009, page 332). Post-war economic difficulties contributed to a situation in which “theft, terror, and brutal intimidation plagued the mountain South for the rest of the century” (Roth 2009, page 339).

¹⁵ Paciotti and Richerson (2002) provides other examples, where the culture of certain groups, like the Chinese in the San Francisco vice industry or the Italian mafia, were the best adaptive norms and came to dominate environments where state institutions are weak.

¹⁶ Empirical evidence on the persistent effects on culture of the African slave trade (Nunn and Wantchekon 2011), Ottoman domination (Grosjean 2011a, 2011b) or climatic conditions several centuries ago (Durante 2011) illustrates that indeed, cultural change is slow.

persistence, the institutional conditions that gave rise to the dominance of the Scots-Irish culture of honor may also underlie the persistence of such cultural norms. Berkowitz and Clay (2006) document enduring lower judicial quality in Southern states in the early 21st century.¹⁷ The hypothesis here is that the Scots-Irish culture of honor was transmitted to subsequent generations only where formal judicial institutions were persistently weak. Where formal institutions are strong and provide alternative sources of dispute adjudication and of property rights' security, the returns to interpersonal violence are low and the risks high, because of the threat of imprisonment. Of course, cultural norms may contribute to the persistence of inefficient institutions. Uncovering the direction of causality between formal and informal institutional persistence is an impossible task given the absence of time varying data on institutional quality and on settlers characteristics, as explained in the next Section.

3. Data

3.1. Crime

Crime data comes from the Uniform Crime Reporting (UCR) Program Data by the United States Department of Justice and Federal Bureau of Investigation. The unit of observation is the monthly count of different offenses in each reporting agency. UCR data provide information on 43 offenses and the counts of arrests by age, sex, and race for each offense in more than 17,000 reporting agencies.

The main offense of interest to test the culture of honor hypothesis is “Murder and non-negligent manslaughter”. Homicide by white offenders, defined as the number of homicides for which a white offender has been arrested as a proportion of the white population, is of particular interest to test the culture of honor hypothesis. Data on aggravated assaults and other types of violent crime or offenses are also used. More precise information on the type of homicide is available from the Supplementary Homicide Reports (SHR) of the UCR, which provide information on the relationship between offenders and victims. Homicides generally involve acquaintances (26.5%) or close family members (21.5%) and are committed with a gun (34%). More than 6% of homicides are perpetrated with a blunt weapon, such as a hammer or a club.¹⁸

¹⁷ Given that different states also have different laws pertaining to, for example, the use of concealed weapons, retreat rules and rules regarding the defense of home and property, there is no reason to expect full convergence between Northern and Southern judicial systems.

¹⁸ Percentages of homicides for which information on the relationship between offender and victim or weapon used is provided.

Data collection by the UCR started in the 1960s but data at the county level is only available since 1980. The number of reporting agencies has been increasing over the years and for this reason, the analysis relies mostly on more recent and complete data, for 2000-2007. Data since 1980 is used for robustness and to explore how the influence of Scots-Irish settlements has evolved over time. The unit of observation is a county. Data is available for more than 2900 counties. A source of historical crime data is the 1904 Special Report to the Bureau of the Census of Prisoners and Juvenile Delinquents in Institutions, which records the number of inmates held for homicide, a proxy for homicide, but only at the state level.

UCR data is merged with the 2000 Census to obtain crime rates per 100,000 people. The average yearly crime rate per 100,000 people in 2000-2007 is 5.8. States with the highest crime rate are North and South Carolina and the lowest are Maine and New Hampshire.¹⁹ The US-wide average yearly homicide rate by white offenders is 2.5 per 100,000, more than twice the average *total recorded* homicide rate in the EU-12.²⁰ Other contemporary determinants of crime, such as demographic, racial and socio-economic county characteristics are from the 2000 US Census. Number of police officers and police budget per capita at the county level are from the 2000 Census of State and Local Law Enforcement Agencies (US Dept. of Justice 2000).

3.2. Historical Settlements

Historical Census data is from the National Historical and Geographical Information System and IPUMS (Ruggles et al. 2010). The first US Census was recorded in 1790. Censi were then carried out every ten years. However, not all Censi contain information on countries of origin and the first Census to contain such information after the 1790 Census is in 1870.

As described in Section 2, Scots-Irish settlement in the US was roughly completed by 1775. The ensuing massive emigration from Ireland in the 1840s consisted of culturally very different people, Catholics from the South of Ireland. In order to identify the Scots-Irish, the analysis relies on the only pre-1840 Census that contains information on countries of origin: the 1790 Census.²¹ Settlers' age, family sizes and slaveholding are recorded in 286 counties. Information on the country of origin is available only in 150 counties in 11 states according

¹⁹ Alaska and Hawaii are excluded.

²⁰ This is a lower-bound estimate of the difference since unsolved crime is not considered in the US number but is in the EU-12 number. The source of data on EU crime rate is UNODC (2010).

²¹ The Scots-Irish are not identifiable by their last names, as argued by Berthoff (1986).

to the 1790 states boundaries, 13 according to contemporary boundaries.²² Census data is matched to crime data and a match is obtained for 150 counties. Among those, the most violent are in South Carolina: Marlboro for overall homicide and Orangeburg for homicides by whites.

The 1790 Census records as countries of origin of settlers: “England and Wales”, “Ireland”, “Scotland”, “France”, “Holland”, “Hebrew” and “All other nationalities”. In the rest of the paper, the main group of interest is the Scots grouped together with the Ulster Scots. They represent 7% of the total 1790 US population (see Table 2 for the regional distribution). Middlesex, New Jersey and Mifflin, Pennsylvania are the counties with the highest proportion of Scots or Scots-Irish in 1790.

The 2000 Census contains data on ancestry. Vertical cultural transmission from parents to children implies that Americans of Scots-Irish ancestry are more likely to share cultural traits with the original Scots-Irish settlers. People reporting Scots-Irish as first or second ancestry in the 2000 Census are considered as being of Scots-Irish ancestry. Americans of Scots-Irish ancestry are generally concentrated in the mountain South and the Ohio River valley, with additional pockets of concentration in Montana, Texas, Colorado and Nebraska (see Table 2 for the regional distribution).

The 1840 and 1880 Censi provide the earliest information on economic, farming and herding activity and are also used in the analysis.

3.3. Institutional Quality

Historical data on institutional quality at a disaggregated level is scarce. Berkowitz and Clay (2006) provides an early measure of court quality at the state level, based on selection and retention procedures for state judges. The authors argue that, of methods of judicial selection and retention, partisan elections are associated with less judicial independence and, in turn, lower court quality. A dummy variable indicating whether state judges are appointed through partisan elections in 1866, the earliest available date is used as a proxy for historical court quality. State judges were appointed by partisan elections in all 13 states in the 1790 Census but Maryland, New York, Pennsylvania and West Virginia.

A limitation of this measure is its availability at the state level only. Following Besley and Prat (2006) and Gentzkow, Glaeser and Goldin (2006), newspaper circulation is used as

²² Some counties were carved out of Massachusetts and Virginia and reallocated to, respectively, Maine and West Virginia at the creation of these two states in 1862 and 1820. The 13 states are Connecticut, Maryland, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia and West Virginia.

an additional proxy for institutional quality. The number of newspapers per capita (daily, weekly, or tri-weekly) is available at the county level in the 1840 Census. The average number of newspapers per capita in 1840 in counties included in the 1790 Census is: 10.64 in Northern States, 8.94 in the Border South and 3.80 in the Deep South. The two measures of institutional quality: partisan retention elections for state judges and newspaper circulation are strongly and, as expected, negatively correlated. The correlation coefficient is 0.34, significant at the 1% level.

Descriptive statistics for the variables used in regressions that rely on the 1790 distribution of settlers are displayed in Table 1.

4. Historical Scot and Scots-Irish Settlements and Contemporary Homicide

4.1. Estimating Equations

As the starting point of the analysis, contemporary homicide rates are regressed on the proportion of Scot or Scots-Irish settlers in 1790, controlling for historical and contemporary socio-economic and demographic controls and for regional dummies. The second main specification includes an interaction term between settlers and regional dummies. The estimated equations are of the form:

$$m_c = \beta_0 + \beta_1 SI_c + \beta_2 region_c + \beta_3 X_c + u_c \quad (1)$$

$$m_c = \gamma_0 + \gamma_1 SI_c + \gamma_2 region_c + \gamma_3 region_c * SI_c + \gamma_4 X_c + u_c \quad (2)$$

where m_c is the average annual homicide rate per 100,000 people between 2000 and 2007 at the county level, overall and by ethnicity of offender. SI_c is the proportion of settlers from Scotland or Ireland in the total county population in the 1790 Census. Additional specifications consider the number of settlers, instead of the proportion, as well as linear log specifications, with either the log of the number or of the proportion of settlers. $region_c$ is a vector of regional dummies for Northern states, Border South and Deep South. In 1790, the Deep South consists of Virginia and the Carolinas; and the Border South of Delaware, Maryland and West Virginia. The vector X_c denotes contemporary socio-economic and demographic county level characteristics, such as: log of aggregate earnings, the proportion of population in urban or rural areas, income Gini coefficient, racial composition and ethnic fractionalization. In additional robustness specifications, numbers of police officers and the log of the police budget per capita in 2000 are included as controls. X_c also includes historical controls, such as number of slaves and population density in 1790. In all specifications, standard errors are robust to heteroskedasticity.

4.2. OLS Baseline Estimates

Table 3 reports OLS estimates for the overall homicide rate (Columns 1 to 4) and homicide rates by offenders of different ethnicities: white (Columns 5 to 8) and black (Columns 9 to 12). The specifications in (1) and (2) are estimated for each dependent variable, first without controls and then with the full set of contemporary and historical controls.²³ The estimates show that the proportion of Scot or Scots-Irish settlers in 1790 has a positive and statistically significant association with contemporary homicide rates and homicide rates by white offenders, but the effect is robust in the South only once all contemporary controls are included. The culture of honor was brought along by white settlers and should not have permeated black culture, given the Scots-Irish' limited involvement in slavery and the segregation of whites and blacks at the time of their settlement.²⁴ Accordingly, Scot or Scots-Irish settlements have no statistical relationship with homicide by black offenders.

Results in Table 3 indicate that, in slight contrast with the Nisbett-Cohen hypothesis, differences in the presence of Scot or Scots-Irish settlers do not contribute to explain the North-South differences in homicide rates. However, within the South, and most particularly in the Deep South, Scots or Scots-Irish settlements are strongly associated with homicide by whites. The interaction between the proportion of Scots or Scots-Irish settlers and the Deep South is statistically significant at the 5% level for overall homicide and at the 1% level for white offender rates. The result is robust to the inclusion of all contemporary controls. For white offender rates, the interaction with Border South is also positive and statistically significant at the 5% level when controls are included.

The coefficient estimates of the interaction between southern regional dummies and Scot or Scots-Irish settlements are not only statistically significant but also quantitatively meaningful. To see this, Columns 1 and 2 of Table 4 report standardized beta coefficients. An increase in one standard deviation of the proportion of Scot or Scots-Irish settlers (about 0.062) is associated with an increase in homicide rates by 7.5 standard deviations and by 2.71 standard deviations for white offender rates in the Deep South. In the Border South, an

²³ Data from the Census of State and Local Law Enforcement Agencies has missing observations for three counties included in the 1790 Census, resulting in a loss of three observations when all controls are included. Results of regressions without controls are however identical when run on the subset of non-missing observations.

²⁴ According to McDonald and McWhiney (1975), the majority of the Scots-Irish neither owned slaves nor did they aspire to, given that herding was rather profitable. The correlation between Scots or Scots-Irish settlements and slave numbers at the county level is, indeed, negative and significant at the 10% level (-0.12).

increase by one standard deviation of the proportion of Scot or Scots-Irish settlers is associated with an increase in white offender rates by 1.33 standard deviations.²⁵

The goodness of fit of the full specification of the baseline equation is satisfactory. Information on settlers' regional distribution together with current socio-economic and demographic characteristics explains about 50% of the variation of homicide rates across counties.

Table 4 reports the results of alternative specifications of the main independent variable of interest. Specifications in columns 3 to 6 use the logged value of the proportion of Scots or Scots-Irish settlers (+1) at the county level. Specifications in columns 7 to 10 use the number of Scots or Scots-Irish settlers (+1) and, in Columns 11 to 14, the logged value of that number. When numbers of settlers are considered, regressions control for the county 1790 population. The main result is robust to the use of all alternative specifications: Scots or Scots-Irish settlers are positively and significantly associated with homicide rates in the Deep South, particularly by white offenders. For the remainder of the analysis, the proportion of Scot or Scots-Irish settlers in the total county population is used as the baseline measure.

The relationship between homicide in the Deep South and Scot or Irish settlers in 1790 is also robust to including additional controls, namely education (by race), terrain characteristics, such as mean elevation, differences in elevation and total area, historical land use and agricultural output as well as for mining discoveries at the state level. It is robust to controlling for interactions between regional dummies and all controls, to including state dummies and to clustering standard errors at the state level. Table A2 in Appendix presents the results of these additional specifications.

4.3. Type of Crime

The culture of honor is a self-protection ethic, and its purpose is the defense of a reputation. It should predict homicide, as established above, as well as aggravated assaults, which is confirmed in Columns 1 and 2 of Table 5. Other regression results displayed in Table 5 investigate the nature of the relationship between offender and victim and the weapon used, which reveals information on the motivation of homicide. It is more likely that homicides

²⁵ It may be surprising that the reported coefficients are much bigger when the dependent variable includes all homicide compared with the case where the dependent variable is the white offender rate only, given that Scots-Irish presence has no influence on black offender homicide rates. The proportion of unresolved homicide may account for this. Although the average homicide rate is 4.35 per 100,000 in the sample, the sum of white and black offender rates, when computed over the whole population, only amounts to 2.63 (1.06 for whites, 1.57 for blacks, other ethnicities are a minority of offenders).

perpetrated in defense of one's reputation are spontaneous (O'Donnell 2005) and involve people who, although not directly related, know one another. Accordingly, homicides that are more likely in Southern counties with a high proportion of Scots or Scots-Irish in 1790 involve acquaintances (Columns 3 and 4) and are perpetrated with a blunt object, such as a hammer or a club, which denotes spontaneity.

Cultures of honor should deter violent sexual crime against women of other families, since male honor extends to the family and the fear of retaliation by male relatives should act as a strong deterrent. Table 5 presents the results of regressions in which the outcome variable is the annual average rape rate per 100,000 people by white offenders (Column 7 and 8). Because reported rape is likely noisy and endogenous to the quality of policing, Columns 9 and 10 consider the rate of homicide perpetrated in the context of rape and sex offenses as the dependent variable. The proportion of Scot or Scots-Irish settlers is negatively associated with rape and with sex homicides and the relationship is statistically significant (around the 10% level) in the Deep South. This suggests a positive effect of the Scots-Irish culture of honor in deterring violence against women.

4.4. Robustness and Causality

Selection on Observables: Robustness to Other Crime and Offenses

One explanation for the association between Scots-Irish settlers and homicide is that the counties in which the Scots and Scots-Irish settled are counties in which general crime is higher, what in turn leads to more homicide. For example, homicide may be higher because of differences in the propensity to carry weapons or drink or in the frequency of robberies. If that was the case, the effect on homicide rates should not be robust to additional controls for contemporary crime. In Table 6, controls for rates of weapon carry, drunkenness offenses and robberies are included as additional controls, first individually, then together. For homicides by white offenders, only offenses committed by whites are considered. The effect of Scot or Scots-Irish settlements on homicide rates in the Deep South is robust to the inclusion of all these controls as well as to the inclusion of all offenses interacted with regional dummies in Columns 5 and 10.

Falsification tests

Section 4.3. has shown that Scot or Scot Irish presence does not influence any type of violence but specific violence perpetrated in the defense of one's reputation and is actually associated with lower violent sexual crime against women. Regressions' results in Appendix

Table A3 show that none of the other crime and offenses considered in Table 6, such as robberies, is systematically higher in counties settled by the Scots or Scots-Irish.²⁶ This is an important additional result. It indicates that the legacy of the Scots-Irish is not lawlessness in general but, rather, a specific kind of lethal violence. This result, together with the fact that the relationship between homicide and Scots-Irish settlers is robust to controlling for lawlessness and crime make it unlikely that the selection of Scots-Irish settlers to crime-ridden counties is driving the main result of this paper.

The relationship between homicide and historical settlements in the South is also specific to the Scots or Scots-Irish. Table A4 in Appendix presents the results of specification (2) that considers settlers from England and Wales as well as settlers from France, Germany or Holland, instead of the Scots or Scots-Irish. Their presence in the Border or Deep South is not significantly associated with homicide rates.

Both the fact that crime and violence other than specific violence directed at the protection of male honor and the fact that the relationship holds only for the Scots or the Scots-Irish make it difficult to believe that the relationship between historical settlements and contemporary homicide in the South is entirely driven by systematic migration of only the most violent settlers to specific counties. Indeed, it is hard to understand why migration would have been selective only for the Scots and Scots-Irish and not for other European settlers and, if it were true that only the most violent and anti-social Scots and Scots-Irish migrated, why other crime and general disorder are not also higher.

Selection on Unobservables

Following Altonji, Elder, and Taber (2005) and Nunn and Wantchekon (2011), ratios are computed that reflect how much greater the influence of unobservable factors would need to be, relative to observable factors, to explain away the full positive relationship between Scot or Scots-Irish settlers and contemporary homicide. These ratios are based on the coefficients obtained from two regressions, one with a restricted set of controls and the other with the full set of controls. The full set of controls includes all 2000 socio-economic determinants and police numbers as well as all the 1790 controls. The restricted set includes either no controls or 1790 controls only. Explaining away the full positive relationship between the Scots or Scots-Irish and contemporary homicide rates by whites in the Deep South would require unobservable factors to be about three times greater than observable factors. In the Border

²⁶ With the exception of drunkenness in Northern states.

South the ratio is actually negative, implying that adding controls actually makes the influence of Scot or Scots-Irish settlers more compelling.²⁷

5. Herding, Institutional Quality and the Culture of Honor

Roth (2009) describes high homicide assailant rates by the Scots and Scots-Irish in the 19th century not only in Virginia but also in New England (see Section 2). The relationship documented here however indicates that the Scots-Irish culture of honor has persisted only in the South. This points to more subtle cultural transmission mechanisms than a simple scenario according to which cultural traits were brought along by settlers, transmitted intact to the next generations and dictate violent behavior regardless of the current environment. This Section explores what factors may explain why cultural traits leading to the use of interpersonal violence have survived in the South only.

5.1. Estimating Equation

As discussed in Section 2, cultures of honor are common adaptations among populations that are subject to economic vulnerability and live in regions where the state is weak. These two conditions were prevalent in US the South in the late 18th and 19th century. To investigate to what extent economic vulnerability and institutional quality explain whether and where the Scots-Irish culture of honor has persisted, the estimating equation interacts Scot or Scots-Irish settlements with, alternatively, measures of herding activity and measures of institutional quality in the following way:

$$m_c = \phi_0 + \phi_1 SI_c + \phi_2 Q_{c,s} + \phi_3 Q_{c,s} * SI_c + \phi_4 region_c + \phi_5 X_c + u_c \quad (3)$$

When studying the role of herding $Q_{c,s}$ is a measure of livestock per capita in county c , from the 1840 Census. The analysis deals with sheep and hogs, which were the main animals herded by the Scots and Scots-Irish (McDonald and McWhiney 1975).

When studying the role of institutional quality, $Q_{c,s}$ is either a measure of court quality in state s or a measure of institutional quality proxied by newspapers circulation in county c . Measures of institutional quality are described in Section 2.3. Other variables in (3) are similar to (1) and (2). Equation (3) is estimated in turn on the entire population and in the South only. In all specifications, standard errors are robust to heteroskedasticity.

²⁷ The ratios are obtained from the coefficients obtained in Table 3 and additional regressions not displayed here. In Table 3, the ratios are obtained from the comparison of ‘restricted’ coefficients obtained in Columns 3 and 7 for total and white offender rates respectively with the ‘full’ coefficients obtained in Columns 4 and 8, which control for all available controls.

5.2. Herding and the Culture of Honor

Results of regressions investigating to what extent herding played a role in the persistence of the culture of honor are displayed in Columns 1 to 4 of Table 7. Herding itself does not contribute to violence; quite to the contrary, since the coefficient associated with livestock per capita is negative. Even in combination with Scots or Scots-Irish settlers, herding does not explain the prevalence of violence, except in the South. Indeed, the coefficient associated with the interaction between livestock per capita and Scot or Scots-Irish settlements is not significantly different from zero in the entire population, but is negative and significant in the South, both for overall homicide and white offender rates (Columns 2 and 4). Even though the influence of Scot or Scots-Irish settlements on homicide in the South is more pronounced where herding was more prevalent, the survival of the culture of honor cannot entirely be accounted for by economic occupations or settlers' cultural background alone.

5.2. Institutional Quality and the Culture of Honor

The second potential explanation for why the Scots-Irish culture persisted in the South only has to do with institutional quality. Section 2 discusses the relationship between interpersonal violence and the weakness of formal institutions. Historical accounts suggest that the early institutional environment of the US strongly influenced the survival of the culture of honor. Wyatt-Brown (2001) depicts how in the North, formal and impersonal institutions quickly substituted for the ethic of honor as the cement of social and political order in the 19th century, but that was not the case in the South. The proposition here is that the culture of honor, a private justice system, persisted as a substitute for public law and order. One should thus expect the persistence of the culture of honor to be stronger where formal institutions were weak, particularly around the mid 19th century, the time period identified by Roth (2009) as the time of divergence of southern homicide patterns.

Regressions in Columns 5 to 8 of Table 7 investigate the influence of court quality on the link between Scots-Irish settlements and homicide. The presence of Scots or Scots-Irish settlers is positively associated with homicide rates only in states that used partisan elections as a method of judicial selection, but not in states that used other appointment methods (Columns 5 and 7). This is true in the entire population of counties with 1790 settlement data (Columns 5 and 7) as well as within the South (Columns 6 and 8), although the effect is only marginally statistically significant for white offender rates.

Regressions in Columns 9 to 12 of Table 7 present the results of similar specification with the second, more disaggregated proxy for institutional quality. The main variable of interest is the interaction between the measure of newspaper circulation, and Scot or Scots-Irish settlements. The coefficient on the interaction term is negative and significant, while the main effect of Scots-Irish settlements becomes positive and significant. In other words, counties with larger proportions of Scots or Scots-Irish settlers at the end of the 18th century are more violent today, but not those that benefited from good institutional quality in 1840, as proxied by newspapers circulation. Again, this is true in the entire population of the US (Columns 9 and 11) as well as within the South (Columns 10 and 12).

Because incentives to develop and enforce formal property rights are higher where the value of land is higher, one could expect the culture of honor to have taken root where land values were low. This is confirmed in additional regressions in which land values are proxied (inversely) by the proportion of wooded area over agricultural land in 1880. Results are displayed in Columns 1 to 4 of Table A5. Homicide is associated with Scot or Scots-Irish settlements only in areas with large proportion of wooded areas, that is to say where land values were likely low.²⁸

Taken together, these results point to institutional quality as the main driver of the survival and persistence of the culture of honor. Heterogeneity in institutional quality and lower institutional quality in the South explain the finding that the culture of honor has persisted there only.

6. Cultural persistence

The evidence reviewed so far is consistent with the hypothesis that Scots-Irish cultural norms survived where they paid off: in areas with weak formal institutions. However, the question remains as to why Scots-Irish settlements 200 years ago are still associated with homicide today. Cultural transmission from parents to children generates hysteresis in the transmission of cultural norms. Transmission should nevertheless be observed only where it pays off, that is to say in areas with weak formal institutions. Formal institutions also exhibit hysteresis in their development, so that institutional quality is expected to still be lower in areas with low historical quality, but the quality of institutions in the North and in the South has undoubtedly converged over the period (Berkowitz and Clay 2011). Consequently, the influence of Scots-

²⁸ These results are robust to controlling for other terrain characteristics, such as mean and standard deviation of elevation.

Irish cultural norms should have waned over time. This Section investigates whether and where the Scots-Irish culture of violence was transmitted and its fading influence over time.

6.1. Cultural Transmission: Complementarity between Cultural and Institutional Persistence

One possibility why we still observe a significant influence of Scot-Irish settlements in 1790 is that the descendants of these settlers, who have internalized Scots-Irish cultural norms are still present in these areas. The presence of Americans of Scots-Irish decent in 2000 is indeed strongly correlated with Scot or Scots-Irish settlements in 1790, and actually much more so than for other nationalities. For example, the presence of one Scot or Scot-Irish settler in 1790 in a given county is associated with, on average, 16 individuals of self-declared Scots-Irish decent in 2000. Corresponding numbers are 2 for the English and less than 8 for the Germans.²⁹ The socio-psychological literature and the cultural transmission models à la Bisin and Verdier (2001) explain cultural persistence by the hysteresis of cultural norms that are transmitted from one generation to the next. The main idea of this literature is that the backward looking behavior of parents, who transmit their own values to their children, explains the slow adaptation of cultural values to new economic environments.

Vertical cultural transmission from parents to children implies that agents internalize cultural norms within families so that even today, Americans of Scots-Irish ancestry should display cultural traits that are consistent with a culture of honor. To test this, contemporary homicide rates are regressed on the proportion of Americans who report Scots-Irish as first or second ancestry in the 2000 Census.³⁰ Estimating equations (1) and (2) are performed, using the proportions of people of Scots-Irish ancestry at the county level in the 2000 Census, instead of the historical proportion of Scots-Irish settlers, controlling for a wide number of contemporary county characteristics and contemporary determinants of crime. Regressions are performed in turn on the entire continental US population for which crime data is available (2845 counties) and on the subset of counties that were already in the 1790 Census.³¹

²⁹ This suggests lower mobility rates for the Scots-Irish, which may contribute to the persistence of their cultural norms at the local level.

³⁰ One could raise doubts about the reliability of self-reported ancestry information in Census data. The results are nonetheless robust to the instrumentation of Americans of self-declared Scot or Scots-Irish ancestry by white, native Presbyterians in the 1900 Census. Results are not reported here, but the instrument has a strong predictive power and the coefficient on the instrumented variable is significant and positive at the 5% level in explaining murder rates by white offenders in the Deep South.

³¹ All descriptive statistics for the 2000 Census population are in Table A1.

Results are reported in Table 8. Homicide rates are higher in counties with higher proportions of Americans of Scots-Irish ancestry (Column 1) but, again, the effect comes from the Southern states (Column 2). The coefficients on the interactions between Scots-Irish ancestry and either Border South or Deep South are significant at the 1% to 5% level. The same result holds in the 1790 overlap counties (Columns 3 and 4), although statistical significance is lower. For white offender rates, the interaction between Border South and Scots-Irish ancestry is always positive and statistically significant both in the 2000 population (Column 6) and in the subpopulation of 1790 counties (Column 8). The interaction between Deep South and Scots-Irish ancestry falls short of significance in the 2000 population but is positive and statistically significant at the 1% level in the 1790 subpopulation. The coefficient on the interaction between Midwest and Scots-Irish ancestry is marginally statistically significant and positive for white offender rates. This result is actually driven by the state of Missouri, a state bordering the South and which received large influxes of Southerners of Scots-Irish origin in the 19th century.

A possible reason underlying the result is that violent cultural norms were transmitted only in areas where they paid off, because of the enduring weakness of formal institutions. The hypothesis is that Americans of Scots-Irish ancestry are associated with more violence today in areas where judicial quality was and -is still likely to be low. Estimating equation (3) is performed with the proportion of American of Scots-Irish ancestry in 2000 instead of historical settlements but with the same measures of institutional quality as in Section 5.3. Results are in Table 9. Americans of Scots-Irish ancestry in 2000 are associated with more homicide, overall and by white offenders, but only in areas that had few newspapers per capita in 1840 and in states that had partisan retention elections. Consistent with this, Columns 5 to 8 in Table A5 show that Americans of Scots-Irish ancestry today are associated with more homicide only in areas with little incentives to develop strong property rights due to low historical land values.

These results point to complementarities in institutional and cultural persistence. Scots-Irish cultural traits persisted, and were transmitted to new generations, only where such traits were adaptive: in areas with weak institutional quality.

It is argued here that if a culture of violence survived as a system of private justice in response to lawlessness, it was precisely the Scots-Irish culture that was the most adequate. It is not suggested that this cultural norms were designed specifically as a response to the circumstances of the Southern United States but rather that they were preexisting among the

Scots and Scots-Irish. The Scots and Scots-Irish were historically defiant of centralized institutions (Leeson 2009). Regressions displayed in Table 10 explore whether Southerners of Scots-Irish ancestry, beyond being associated with more violence, also display a value system that is consistent with the reliance on private justice. I use attitudinal data from the *General Social Survey* and I regress individual attitudes towards self-reliance and centralized institutions on self-reported Scots-Irish ancestry. The results confirm that Americans of Scots-Irish ancestry have a higher propensity to have a weapon at home and to be less trusting of the federal government and of formal law enforcement (the Supreme Court), but only those who live in the Deep South.³² The results of several falsification tests, which regress homicide rates or cultural attitudes on other ancestries, are included in Appendix (Tables A6 and A7). No consistent pattern is found.

6.2. Cultural Decay

The Scots-Irish culture of honor still explains the prevalence of homicide, but, if culture is adaptive, its effect should slowly disappear in the face of economic and institutional convergence between the South and North of the US. This subsection shows that this is precisely the case. Scots-Irish settlements explained a much more substantial part of the variation in homicide rates at the beginning of the 20th century, in 1904. The Scots-Irish culture of honor has decayed over time, at a rate of about 3.4% yearly since the beginning of the 1980s, a rate that is consistent with extrapolating to the 1904 data.

County level data is available since the beginning of the 1980s from UCR, although earlier data suffers from missing observations. To study how the variation in homicide that is explained by Scots-Irish settlements has evolved since 1980, yearly homicide rates are regressed on the proportion of Scots or Scots-Irish settlers in 1790 interacted with regional dummies, for every available year from 1980 to 2007.³³ Obtained coefficients are displayed in Appendix Table A8. Coefficients on the interaction between the proportion of Scot or Scots-Irish settlers in 1790 and regional dummies are slowly decreasing over time. The average ‘depreciation rate’ of the culture of honor over the period is about 3.4% yearly in the South and 2.6% in the North (taking a four years beginning and end of period averages), where the coefficient is not significantly different from zero, apart from the first 3 years.

³² The results are robust to clustering standard errors at the state level.

³³ 1984 and 1989 are missing.

Applying this depreciation rate and extrapolating to the beginning of the 20th century implies that the coefficient on the proportion of Scots-Irish settlers should be 629 in the North and 1944 in the Deep South. An early source of crime statistics is the 1904 Special Report to the Bureau of the Census of “Prisoners and Juvenile Delinquents in Institutions”, which counts the number of inmates held for homicide, a proxy for actual homicide, at the state level. Regressing the number of inmates held for homicide in 1904 on the proportion of Scots-Irish settlers in 1790 gives a coefficient of 1404 in the North and 2205 in the Deep South (Table A8, Column 27). These figures are in ballpark of the extrapolated coefficients.

7. Conclusion

This paper examines the economic and cultural underpinnings of lethal interpersonal violence. A popular hypothesis is that the Southern taste for violence is inherited from the Scot and Scots-Irish herders that settled the region. The results illustrate something broadly consistent with this but slightly different. Scot or Scots-Irish presence explains high homicide rates, particularly by white offenders but only within the South. The Scots-Irish culture of interpersonal violence, shaped by a history of lawlessness in the Anglo-Scot borderlands, Ulster and the Scottish Highlands has thrived only in areas where the institutional environment was weak. The interpretation is that such cultural norms have persisted as a private justice system, which substituted for formal law enforcement. Associated with such a culture of private violence is a value system stressing the importance of self-reliance and characterized by defiance of formal and centralized institution, which is still carried by Southerners of Scots-Irish ancestry in the Deep South.

The relationship between Scots and Scots-Irish settlers and homicide is likely causal. The results are robust to the inclusion of a wide array of geographic, historical, and contemporary socio-economic and demographic determinants of violence. The positive relationship between settlers and homicides does not hold for other countries of origin. Consistently with an ethic based on kinship and the defense of a reputation, Scot or Scots-Irish settlements in the South do not explain violence or disorder in general but a specific type of homicide, and are actually associated with less violent sexual crime against women.

This paper contributes to the literature on long-term persistence by highlighting the persistence of cultural norms related to interpersonal violence. The main message is that cultural persistence is not unconditional. Culture is adaptive: the culture of honor thrived, and was transmitted, only in areas with weak formal institutions. This suggests that cultural and institutional persistence are complements: the culture of honor survived as a substitute for

formal law enforcement because institutional quality was low, and it has persisted for that very reason. Consistently with such adaptability, the influence of Scots-Irish cultural norms show signs of disappearing over time, in the face of economic and institutional convergence between North and South.

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TABLES

Table 1: Descriptive Statistics: 1790 Census and 1790 Census Overlap

Variable	Obs	Mean	Std. dev.	Min	Max
Homicide rate (i)	147	4.38	4.36	0	23.86
White offender homicide rate (i) (ii)	147	1.43	1.41	0	8.83
Proportion Scots or Irish 1790	149	0.07	0.06	0	0.33
Population density 1790	149	1.96	3.74	0.05	36.35
Number of slaves 1790, in 1000s	149	2.48	4.92	0	50.63
Log aggregate earnings 2000	147	21.48	1.55	18.26	24.71
Prop. pop. urban 2000	147	0.61	0.31	0	1
Prop. pop black 2000	147	0.13	0.15	0.01	0.64
Ethnic fragmentation index 2000	149	0.3	0.18	0.03	0.78
Income Gini 2000	149	0.43	0.04	0.34	0.59
Police officers per capita 2000	146	0.01	0.07	0.01	0.88
Log of SLLEA budget per capita 2000	146	2.33	2.73	0.01	11.94
Aggravated assault, white offender (i) (ii)	148	72.35	56.23	0	333.74
Homicide rate, victim and offender acquaintances (i)	138	1.02	1.64	0	14.23
Homicide rate by blunt object (i)	138	0.26	0.44	0	3.47
Rape, white offender rate (i) (ii)	148	5.79	3.95	0	22.10
Homicide rate - context rape and sex offenses (i)	138	0.03	0.08	0	0.80
Weapon carry offenses, rate (i)	148	53.20	38.43	0	203.04
Drunkness offenses, rate (i)	148	109.27	140.44	0	525.58
Robbery, rate (i)	148	29.18	24.90	0	151.09
Weapon carry offenses, white offender rate (i) (ii)	148	19.30	14.67	0	114.41
Drunkness offenses, white offender rate (i) (ii)	148	64.48	84.79	0	352.34
Robbery, white offender rate (i) (ii)	148	9.33	8.80	0	49.34
Sheep & pigs per capita 1840	146	2.23	1.7	0.008	11.67
Newspapers per capita 1840	147	8.58	3.17	2.86	14.70
Partisan retention elections 1866	150	0.63	0.49	0	1
Proportion Scots-Irish ancestry 2000 Census	145	0.03	0.01	0	0.09

Notes: The unit of observation is a county. (i) All crime and offenses rates are averages for 2000-2007, per 100,000 people. (ii) “White offender rate” is defined as the number of the relevant offense or crime for which a white offender has been arrested, over the white population.

Source: 1790 and 2000 US Censi, 2000 Census of State and Local Law enforcement agencies, UCR.

Table 2: Descriptive Statistics: Homicide, Scots-Irish Settlers (1790 Census) and Scots-Irish Ancestry (2000 Census), by Region

Region	Homicide rate		White offender homicide rate		Proportion Scots or Irish 1790 (A) or Scots-Irish ancestry in 2000 (B)		Observations
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	
<i>A: 1790 Census</i>							
North	2.93	2.83	1.11	1.09	8.04	7.37	90
Border South	5.87	4.13	2.01	1.35	6.36	2.95	20
Deep South	7.10	5.85	1.91	1.86	3.34	1.57	39
<i>B: 2000 Census</i>							
North	3.10	2.53	1.29	1.07	2.97	1.48	219
Border South	4.14	4.37	1.90	2.79	3.13	1.39	374
Deep South	8.59	8.05	3.36	7.05	3.37	1.86	1016
West	4.94	5.41	3.04	3.60	3.57	1.60	413
Midwest	2.51	3.44	1.17	1.88	2.33	1.12	1051

Notes: North: **CT, MA, ME, NH, NJ, NY, PA, RI, VT**; Border South: DC, **DE, KY, MD, OK, WV**; Deep South: AL, AR, FL, GA, LA, MS, **NC, SC, TX, VA**; West: CA, OR, WA, ID, MT, WY, AZ, NM, CO, NV, UT; Midwest: IL, IN, KS, MI, MN, MO, NE, ND, SD, OH, WI. States indicated in bold are included in the 1790 Census. Proportion Scots or Irish 1790 and Scots-Irish ancestry in 2000 are expressed as percentages of the total county population.

Source: 1790 and 2000 US Censi, UCR.

Table 3: Homicide and Scot or Scots-Irish Settlers in 1790

	1	2	3	4	5	6	7	8	9	10	11	12
	Homicide rate				White offender				Black offender			
Border South	3.07*** [0.96]	0.33 [1.20]	4.09** [2.01]	-1.54 [2.02]	0.94*** [0.32]	0.25 [0.38]	0.14 [0.58]	-1.25** [0.59]	3.19 [5.03]	3.33 [6.40]	0.93 [6.89]	1.19 [8.40]
Deep South	4.51*** [1.05]	-1.12 [1.11]	-1.20 [2.12]	-5.62** [2.20]	0.92*** [0.35]	-0.38 [0.41]	-1.12* [0.65]	-2.11*** [0.71]	-3.33 [2.29]	-3.14 [4.57]	-6.09 [3.86]	-2.76 [6.57]
Prop. SI 1790	7.20* [4.20]	4.36 [3.15]	4.70 [3.68]	1.94 [2.86]	2.38 [1.58]	0.71 [1.56]	0.91 [1.41]	-0.58 [1.43]	28.14 [23.27]	22.33 [24.39]	25.56 [24.63]	21.49 [25.68]
Border South*Prop. SI			-16.70 [21.98]	25.20 [20.77]			12.12 [9.27]	21.38** [8.99]			34.84 [67.63]	32.05 [66.70]
Deep South*Prop. SI			167.45*** [63.15]	120.42** [56.70]			58.93*** [20.31]	43.66*** [16.71]			79.18 [72.72]	-18.28 [97.99]
2000 controls	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes
1790 controls	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes
Observations	147	144	147	144	147	144	147	144	147	144	147	144
R-squared	0.19	0.50	0.29	0.55	0.09	0.33	0.21	0.41	0.04	0.10	0.04	0.10

Notes: The table reports OLS estimates. The unit of observation is a county. All regressions are with a constant. Robust standard errors are reported in brackets. *** significantly different from 0 at the 1% level, ** significantly different from 0 at the 5% level, * significantly different from 0 at the 10% level. All homicide rates are yearly averages for 2000-2007, per 100,000 people. “White (resp. black) offender” is defined as the number of homicides for which a white (resp. black) offender has been arrested, over the white (resp. black) population. “Prop. SI 1790” or “Prop. SI” denotes the proportion of Scots or Irish settlers in the 1790 county population. “2000 controls”: log of aggregate earnings, proportion of the population residing in urban areas, proportion of the population black, ethnic fragmentation, income Gini coefficient, number of sworn officers per capita and log of the per capita budget of state and local law enforcement agencies. “1790 controls”: number of slaves and population density in 1790. The excluded regional category is North. The number of observations goes down from 147 to 144 when all controls are included because of missing observations on police number and budgets in 3 counties.

Source: 1790 and 2000 US Censi, 2000 Census of State and Local Law enforcement agencies, UCR.

Table 4: Homicide and Scot or Scots-Irish Settlers in 1790: Standardized Coefficients and Robustness to Alternative Specifications

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Homicide rate	White offender	Homicide rate	Homicide rate	White offender	White offender	Homicide rate	Homicide rate	White offender	White offender	Homicide rate	Homicide rate	White offender	White offender
	Prop.SI 1790: standardized coefficient		Log(Prop.SI 1790)				Number of Scots or Irish in 1790				Log(Number of Scots or Irish in 1790+1)			
Main effect	0.12	-0.36	5.29	2.34	0.91	-0.66	0.20	0.10	0.02	-0.01	0.51	0.10	0.07	-0.08
	[0.18]	[0.09]	[3.69]	[3.32]	[1.81]	[1.67]	[0.19]	[0.19]	[0.10]	[0.10]	[0.34]	[0.21]	[0.11]	[0.09]
Inter. Border South	1.56	1.33**		26.61		23.07**		1.38		-0.34		0.35		-0.49
	[1.29]	[0.56]		[22.85]		[9.75]		[2.30]		[0.66]		[2.07]		[0.65]
Inter. Deep South	7.47**	2.71***		123.72**		45.10**		7.98**		3.67***		2.80***		1.12***
	[3.52]	[1.04]		[59.13]		[17.49]		[3.06]		[0.92]		[1.03]		[0.42]
2000 controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
1790 controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Total pop 1790	no	no	no	no	no	no	yes	yes	yes	yes	yes	yes	yes	yes
Observations	144	144	144	144	144	144	144	144	144	144	144	144	144	144
R-squared	0.55	0.41	0.50	0.55	0.33	0.41	0.51	0.56	0.34	0.45	0.51	0.56	0.34	0.41

Notes: See Notes to Table 3.

Table 5: Type of Crime and Scot or Scots-Irish Settlers in 1790

	1	2	3	4	5	6	7	8	9	10
	Aggravated assault, white offender rate		Victim and offender acquaintances		Homicide by blunt object -hammer, club, etc		Rape, white offender rate		Homicide rate - context rape and sex offenses	
Prop. SI 1790	18.20 [57.80]	-14.81 [53.34]	1.89+ [1.30]	0.34 [0.60]	0.59+ [0.38]	0.26 [0.25]	-6.39* [3.66]	-5.51 [3.86]	-0.02 [0.05]	-0.03 [0.04]
Border South*Prop. SI		607.27 [482.28]		16.71* [8.92]		1.26 [2.63]		-12.64 [20.38]		0.69 [0.64]
Deep South*Prop. SI		925.55** [453.19]		76.16+ [47.31]		22.37** [11.22]		-66.11* [40.84]		-1.73+ [1.13]
2000 controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
1790 controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Source		UCR		SHR		SHR		UCR		SHR
Observations	144	144	138	138	138	138	144	144	138	138
R-squared	0.36	0.39	0.36	0.49	0.19	0.33	0.36	0.37	0.03	0.07

Notes: The table reports OLS estimates. The unit of observation is a county. All regressions are with a constant. Robust standard errors are reported in brackets. *** significantly different from 0 at the 1% level, ** significantly different from 0 at the 5% level, * significantly different from 0 at the 10% level, + significantly different from 0 at the 15% level. All reported dependent variables are yearly average rates for 2000-2007, per 100,000 people. “White offender rate” is the number of relevant offenses for which a white offender has been arrested, over the white population. “Prop. SI 1790” or “Prop. SI” denotes the proportion of Scots or Irish settlers in the 1790 county population. “2000 controls”: log of aggregate earnings, proportion of the population residing in urban areas, proportion of the population black, ethnic fragmentation, income Gini coefficient, number of sworn officers per capita and log of the per capita budget of state and local law enforcement agencies. “1790 controls”: number of slaves and population density in 1790.

Source: 1790 and 2000 US Censi, 2000 Census of State and Local Law enforcement agencies, Supplementary Homicide Report (SHR), UCR.

Table 6: Homicide and Scot or Scots-Irish Settlers: Robustness to Lawlessness and Crime

	1	2	3	4	5	6	7	8	9	10
	Homicide rate				White offender					
Border South	-0.39 [2.04]	0.33 [1.93]	-1.28 [1.93]	-1.02 [1.93]	1.25 [3.37]	-1.19* [0.61]	-1.04* [0.60]	-0.76 [0.64]	-0.74 [0.65]	-0.86 [0.59]
Deep South	-3.72* [1.90]	-4.94** [2.26]	-1.59 [1.85]	-2.73 [1.82]	-6.10*** [1.99]	-1.95*** [0.68]	-1.99*** [0.69]	-1.45** [0.62]	-1.41** [0.61]	-2.32*** [0.78]
Prop. SI 1790	2.28 [2.83]	1.07 [2.89]	-0.33 [2.29]	-0.97 [2.57]	-0.04 [2.42]	-0.13 [1.42]	-0.48 [1.45]	-0.79 [1.34]	-0.76 [1.36]	-0.92 [1.31]
Border South*Prop. SI	11.45 [22.71]	12.23 [21.11]	19.47 [22.57]	17.72 [21.82]	1.65 [13.75]	18.98** [9.40]	19.63** [8.99]	12.10 [11.25]	11.86 [11.53]	7.58 [7.36]
Deep South*Prop. SI	107.44** [47.65]	117.27** [52.55]	87.21* [50.76]	89.67* [45.58]	90.34** [38.17]	43.74** [17.19]	44.27** [17.04]	46.05*** [16.63]	46.18*** [16.77]	43.95*** [16.38]
Weapon carry, total or white	0.04*** [0.01]			0.02 [0.01]	-0.02 [0.01]	0.02*** [0.01]			-0.00 [0.01]	-0.01 [0.01]
Drunkenness, total or white		0.00* [0.00]		0.00* [0.00]	-0.00 [0.00]		0.00 [0.00]		-0.00 [0.00]	-0.00 [0.00]
Robbery, total or white			0.08*** [0.01]	0.06*** [0.02]	-0.00 [0.00]			0.07*** [0.01]	0.07*** [0.02]	0.08*** [0.02]
2000 controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
1790 controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Interaction offenses and regional dummies	no	no	no	no	yes	no	no	no	no	yes
Observations	144	144	144	144	144	144	144	144	144	144
R-squared	0.60	0.52	0.63	0.65	0.72	0.43	0.40	0.51	0.51	0.60

Notes: See Notes to Table 3. All offenses included as controls are yearly average rates for 2000-2007, per 100,000 people. Total rates are used in Columns 1 to 4. White offender rates for each offense are used in Columns 5 to 8. In Columns 5 and 10, interaction terms between regional dummies and considered offenses are included but for conciseness, only the results pertaining to the main effect are displayed.

Source: 1790 and 2000 US Censi, 2000 Census of State and Local Law enforcement agencies, UCR.

Table 7: Herding, Institutional Quality and Persistence of the Culture of Honor

	1	2	3	4	5	6	7	8	9	10	11	12
	Homicide rate		White offender		Homicide rate		White offender		Homicide rate		White offender	
Population	All	South	All	South	All	South	All	South	All	South	All	South
Prop. SI 1790	0.33 [4.54]	-59.34 [57.20]	-0.38 [2.59]	-32.46* [17.48]	-2.06 [4.57]	22.93 [21.28]	-0.27 [2.15]	12.75+ [8.48]	127.47* [67.327]	218.00* [115.655]	44.91** [19.243]	70.31** [26.781]
Sheep&Pigs per cap	-0.26+ [0.18]	-4.97** [2.05]	-0.07 [0.08]	-2.16*** [0.65]								
Prop SI*Sheep&Pigs per cap	1.51 [1.36]	55.53* [27.59]	0.47 [0.78]	24.00*** [8.18]								
Partisan Elections 1866					-2.87*** [1.06]		-0.93*** [0.40]					
Prop. SI*Partisan Elections					19.70+ [12.34]	123.55* [71.67]	4.63 [3.32]	25.55+ [17.34]				
Newspapers per cap 1840									0.62** [0.308]	0.87 [0.601]	0.25** [0.120]	0.22 [0.158]
Prop. SI*Newspapers per cap									-11.64* [6.343]	-23.15* [13.548]	-4.20** [1.839]	-7.24** [3.324]
2000 controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
1790 controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Regional dummies	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no
Observations	143	56	143	56	147	57	147	57	144	54	144	54
R-squared	0.52	0.54	0.3	0.54	0.22	0.52	0.12	0.48	0.49	0.51	0.37	0.51

Notes: The table reports OLS estimates. The unit of observation is a county. All regressions are with a constant. Robust standard errors are reported in brackets. *** significantly different from 0 at the 1% level, ** significantly different from 0 at the 5% level, * significantly different from 0 at the 10% level, + significantly different from 0 at the 15% level. “Homicide rate”, “White offender”, “Prop. SI 1790” and “Prop. SI” as in Table 3. “2000 controls”: log of aggregate earnings, proportion of the population residing in urban areas, proportion of the population black, ethnic fragmentation and income Gini. “1790 controls”: number of slaves and population density in 1790. “Sheep&Pigs per cap”: number of sheep and pigs per 1840 capita (2.32 in Northern states, 2.08 in Border South and 2.10 in Deep South). “Partisan Elections 1866”: dummy variable indicating whether states relay on partisan elections for state-level judicial appointments in 1866. States in 1790 Census with partisan retention elections are: CT, DE, ME, MA, NH, NJ, NC, RI, SC, VT and VA. 1790 states without partisan election (merit appointments) are: MD, PA and WV. “Newspapers per cap”: number of daily, weekly, or tri-weekly newspapers per capita in 1840 (10.64 in Northern States, 8.94 in Border South and 3.80 in Deep South, for counties in 1790 Census). Source: 1790, 1840 and 2000 US Censi, 2000 Census of State and Local Law enforcement agencies, UCR, Berkowitz and Clay (2011).

Table 8: Homicide and Americans of Scots-Irish ancestry in 2000 Census

	1	2	3	4	5	6	7	8
	Homicide rate				White offender			
Border South	0.57 [0.36]	-1.31 [0.81]	0.71 [1.17]	-3.02 [4.86]	0.22 [0.36]	-0.97 [0.70]	0.28 [0.37]	-2.17* [1.12]
Deep South	2.34*** [0.34]	0.51 [0.66]	0.09 [1.14]	-5.60 [3.58]	1.56*** [0.22]	1.44*** [0.49]	-0.06 [0.41]	-2.56** [1.08]
Midwest	1.71*** [0.37]	1.80** [0.73]			1.29*** [0.31]	1.96*** [0.54]		
West	0.42 [0.27]	-0.42 [0.47]			0.11 [0.23]	-0.27 [0.30]		
Prop. SI 2000	21.46*** [7.86]	-16.16* [9.72]	20.76 [28.36]	-26.95 [22.42]	-3.81 [7.01]	-10.07* [6.07]	-5.34 [8.75]	-27.87*** [10.43]
Border South*Prop. SI 2000		58.59** [22.83]		115.33 [132.43]		37.46** [18.37]		77.46** [37.52]
Deep South*Prop. SI 2000		54.93*** [14.95]		140.81* [74.01]		4.47 [10.44]		61.25*** [22.08]
West*Prop. SI 2000		3.22 [17.67]				-17.43 [11.17]		
Midwest*Prop. SI 2000		21.73 [13.47]				13.54* [7.49]		
2000 controls	yes	yes	yes	yes	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes	yes	yes	yes	yes
Population	2000 Census		1790 counties		2000 Census		1790 counties	
Observations	2,839	2,839	142	142	2,839	2,839	142	142
R-squared	0.26	0.26	0.50	0.52	0.06	0.06	0.35	0.41

Notes: The table reports OLS estimates. The unit of observation is a county. All regressions are with a constant. Robust standard errors are reported in brackets. *** significantly different from 0 at the 1% level, ** significantly different from 0 at the 5% level, * significantly different from 0 at the 10% level. “Homicide rate” and “White offender” are as usually defined (see Table 3). “Prop. SI 2000” denotes the proportion of Americans of first or second Scots-Irish ancestry in the 2000 Census, as a proportion of the 2000 county population. “2000 controls” are all usual socio-eco controls and law enforcement controls. The excluded regional category is North. Border South: DC, DE, KY, MD, OK, WV. Deep South: AL, AR, FL, GA, LA, MS, NC, SC, TX, VA. West: CA, OR, WA, ID, MT, WY, AZ, NM, CO, NV, UT. Midwest: IL, IN, KS, MI, MN, MO, NE, ND, SD, OH, WI.

Source: 1790 and 2000 US Censi, 2000 Census of State and Local Law enforcement agencies, UCR.

Table 9: Historical Institutional Quality and Transmission of the Culture of Honor

	1		2		3		4		5		6		7		8	
	Homicide rate		White offender		Homicide rate		White offender									
Population	All	South	All	South	All	South	All	South	All	South	All	South	All	South	All	South
Prop. SI 2000	-3.85	-34.6	-20.3	-64.71*	104.01***	118.15***	32.67***	42.47***								
	[11.92]	[30.69]	[14.51]	[38.50]	[17.237]	[30.256]	[7.517]	[12.682]								
Partisan Elections 1866	-0.41	-0.23	-0.51	-1.04												
	[0.73]	[1.15]	[0.55]	[0.98]												
Prop. SI 2000*Partisan Elections	54.42***	83.15***	31.11*	73.04*												
	[18.00]	[34.66]	[16.28]	[41.01]												
Newspapers per cap 1840					0.13**	0.12	0.02	0.05								
					[0.054]	[0.226]	[0.025]	[0.094]								
Prop SI 2000*Newspapers per cap					-10.47***	-13.68**	-3.62***	-4.74*								
					[1.957]	[6.202]	[0.892]	[2.433]								
2000 controls	yes	yes	yes	yes	yes	yes	yes	yes								
Regional dummies	yes	no	yes	no	yes	no	yes	no								
Observations	2358	930	2358	930	1661	903	1661	903								
R-squared	0.28	0.14	0.07	0.04	0.37	0.25	0.12	0.05								

Notes: See Notes to Table 8. States with partisan retention elections are: AL, CT, DE, FL, GA, LA, ME, MA, NH, NJ, NC, RI, SC, VT and VA. States without partisan election (merit appointments) are: AR, CA, IL, IN, IA, KS, KY, MD, MI, MN, MS, MO, NE, NV, OH, OR, PA, TN, TX, WV and WI. “Newspapers per cap”: number of daily, weekly, or tri-weekly newspapers per capita in 1840 (in Northern States: 10.30, in Border South: 5.58, in Deep South: 6.83, in West: NA in 1840 Census, in Midwest: 11.16). Source: 1840 and 2000 Censi, UCR, Berkowitz and Clay (2011).

Table 10: Cultural Attitudes of Americans of Scots-Irish Ancestry

	1	2	3	4	5	6
	Weapon at home		Confidence exec. branch fed. gov.		Confidence US Sup. Court	
Border South	0.18*** [0.010]	0.18*** [0.011]	0.01 [0.019]	0.01 [0.020]	-0.08*** [0.019]	-0.08*** [0.020]
Deep South	0.10*** [0.006]	0.09*** [0.006]	0.04*** [0.013]	0.04*** [0.013]	-0.04*** [0.012]	-0.03** [0.013]
West	0.06*** [0.006]	0.06*** [0.007]	-0.03** [0.013]	-0.03** [0.014]	-0.01 [0.013]	-0.01 [0.014]
Midwest	0.07*** [0.006]	0.07*** [0.006]	-0.03** [0.012]	-0.02* [0.013]	-0.01 [0.012]	-0.01 [0.013]
Scot or Scot-Irish ancestry	0.01 [0.007]	-0.01 [0.013]	-0.01 [0.014]	0.02 [0.030]	0.00 [0.014]	0.05 [0.030]
Border South*Scot or Scot-Irish ancestry		0.01 [0.028]		-0.03 [0.053]		-0.07 [0.054]
Deep South*Scot or Scot-Irish ancestry		0.05*** [0.018]		-0.07* [0.039]		-0.07* [0.039]
West* Scot or Scot-Irish ancestry		0.01 [0.020]		0.02 [0.043]		-0.01 [0.042]
Midwest* Scot or Scot-Irish ancestry		0.01 [0.019]		-0.02 [0.041]		-0.06 [0.041]
Individual controls	yes	yes	yes	yes	yes	yes
Observations	39,553	39,553	26,334	26,334	26,030	26,030
R-squared	0.17	0.17	0.04	0.04	0.01	0.01
Value of dependent variable		0.25		0.86		1.18

Notes: The table reports OLS estimates. The unit of observation is an individual. All regressions are with a constant and GSS year dummies. Robust standard errors reported in brackets. *** significantly different from 0 at the 1% level, ** significantly different from 0 at the 5% level, * significantly different from 0 at the 10% level. Weapon at home: takes value 1 if the respondent owns a pistol, rifle or shotgun. The GSS asks: “Would you say you have a great deal of confidence (coded 2), only some confidence (coded 1), or hardly any confidence at all (coded 0) in [these institutions]?” “Confidence exec. branch Fed. Gov”, respectively “Confidence US Sup. Court”, is the answer to this question about the executive branch of the federal government, respectively the U.S. Supreme Court. “Scot or Scot-Irish ancestry” takes value one if respondent reports Scot or Scot-Irish ancestry in the GSS. “Individual controls” are: income, working status, self-employed, sex, race, born in US, size of place of residence.

Source: US General Social Survey (GSS) 1972-2008 Cumulative dataset.

APPENDIX

Table A1: Descriptive Statistics: 2000 Census

Variable	Obs	Mean	Std. Dev.	Min	Max
Annual homicide rate per 100,000, 2000-2007	2845	5.09	6.22	0	120.77
White offender homicide rate	2845	2.25	4.61	0	187.27
Proportion Scots-Irish ancestry 2000	3063	0.03	0.02	0	0.17
Log aggregate earnings 2000	3064	19.68	1.56	13.92	25.8
Prop. pop. urban 2000	3063	0.39	0.3	0	1
Prop. pop black 2000					
Ethnic fragmentation index 2000	3063	0.09	0.14	0	0.86
Income Gini 2000	3072	0.25	0.19	0	0.78
Police officers per capita 2000	3067	0.98	9.6	0	307.6
Log of SLLEA budget per capita 2000	3067	4.65	3.78	0	15.24
Newspapers per capita	1871	8.58	4.14	2.86	19.39
Partisan retention elections 1866	2576	0.27	0.44	0	1

Source: 2000 US Census, 2000 Census of State and Local Law enforcement agencies, UCR.

Table A2: Robustness of Main Specification: Additional Controls

	1	2	3	4	5	6
	Homicide rate	White offender	Homicide rate	White offender	Homicide rate	White offender
Border South	-0.51 [2.20]	-0.73 [0.68]	-2.54 [29.97]	-4.08 [12.91]	-1.45 [2.22]	-0.55 [0.68]
Deep South			3.14 [30.44]	-7.04 [11.18]	-5.42* [2.74]	-1.28 [0.77]
Prop. SI 1790	-9.09** [4.08]	-4.19* [2.31]	-1.45 [2.49]	-1.08 [1.41]	-2.48 [3.75]	-0.69 [1.73]
Border South*Prop. SI	22.59 [20.91]	16.50** [7.58]	9.20 [27.87]	12.53 [12.58]	25.60 [22.16]	17.37* [9.02]
Deep South*Prop. SI	84.54* [47.18]	22.68 [15.52]	154.20* [79.88]	41.00* [20.80]	110.98* [65.42]	32.74* [17.78]
Log agg. earnings 2000	0.21 [0.36]	0.25** [0.12]	-0.02 [0.38]	0.04 [0.14]	0.17 [0.51]	0.05 [0.14]
Prop. pop. urban	-4.27** [1.80]	-1.80*** [0.68]	-1.89 [1.62]	-1.48** [0.64]	-2.29 [2.14]	-0.57 [0.57]
Prop. pop. black	9.23** [3.97]	4.62*** [1.68]	30.71*** [5.28]	8.71* [5.03]	8.46 [6.01]	5.83*** [1.99]
Ethnic fragm. 2000	9.75*** [3.52]	1.45 [1.31]	1.81 [3.04]	1.18 [1.84]	13.71*** [5.05]	0.79 [1.71]
Income Gini 2000	6.86 [9.96]	-4.36 [2.69]	4.40 [7.97]	-1.66 [4.27]	12.61 [8.27]	-0.75 [2.79]
Officer per cap. 2000	-0.73 [1.01]	-0.10 [0.44]	-0.29 [1.43]	0.13 [0.61]	-0.07 [1.40]	-0.03 [0.52]
Log SLLEA budget per cap	0.05 [0.09]	-0.03 [0.04]	-0.05 [0.13]	-0.04 [0.06]	0.10 [0.11]	-0.01 [0.05]
Pop. density 1790	-0.16* [0.09]	-0.03 [0.03]	-0.23*** [0.04]	-0.05** [0.02]	-0.13 [0.11]	0.01 [0.04]
Slave pop. 1790	0.07 [0.06]	-0.03 [0.03]	-0.09 [0.38]	-0.08 [0.16]	0.44 [1.94]	-0.49 [0.38]
Prop white high school degree					15.04 [10.33]	-1.07 [3.35]
Prop black high school degree					14.99 [11.09]	-1.34 [3.90]
County surface					6.58 [4.97]	2.68 [1.87]
Min elevation					0.02 [0.02]	0.00 [0.01]
Max elevation					-0.01 [0.01]	0.00 [0.00]
Mean elevation					-0.01 [0.01]	-0.00 [0.00]
Standard dev. elevation					0.04 [0.03]	-0.00 [0.01]
State FE	yes	yes	no	no	no	no
Interactions: all controls and regional dummies	no	no	yes	yes	no	no
Observations	144	144	144	144	144	144
R-squared	0.62	0.55	0.69	0.49	0.56	0.45

Notes: See Notes to Table 3.

Table A3: Other Offenses and Scots-Irish Settlers

	1	2	3	4	5	6
	Weapon carry offenses by white males, per 100,000, 2000-2007		Drunkness offenses by white males, per 100,000, 2000-2007		Robbery by white males, per 100,000, 2000-2007	
Border South	9.18*	5.87	-6.49	22.02	3.42	-4.01
	[5.15]	[10.44]	[14.22]	[24.69]	[2.64]	[5.69]
Deep South	0.00	-1.04	134.91***	132.28***	-7.25**	-6.71*
	[5.40]	[7.43]	[26.56]	[37.10]	[3.08]	[3.97]
Prop. SI 1790	-14.86	-16.73	212.85***	224.89***	7.39	4.21
	[14.04]	[14.26]	[80.36]	[81.28]	[9.57]	[8.71]
Border South*Prop. SI		48.50		-425.02		110.68
		[91.17]		[295.66]		[80.02]
Deep South*Prop. SI		18.10		172.26		-40.97
		[114.92]		[838.23]		[49.68]
2000 controls	yes	yes	yes	yes	yes	yes
1790 controls	yes	yes	yes	yes	yes	yes
Observations	144	144	144	144	144	144
R-squared	0.16	0.16	0.31	0.31	0.38	0.39

Notes: See Notes to Tables 3 and 6.

Table A4: Falsification – Other Nationalities of Settlers

	1	2	3	4
	Homicide rate		White offender	
	England or Wales	Dutch, French or German	England or Wales	Dutch, French or German
Border South	-8.80 [5.40]	0.22 [1.39]	-2.22 [1.51]	0.35 [0.42]
Deep South	-7.26** [3.18]	-0.76 [1.18]	-1.08 [0.94]	-0.34 [0.39]
Prop. Settlers (see Col. header)	-3.17* [1.77]	5.28** [2.39]	-1.47** [0.72]	2.71 [1.66]
Border South*Prop. Settlers	14.57 [10.69]	4.07 [5.30]	3.73 [2.51]	-0.38 [1.95]
Deep South*Prop. Settlers	15.17 [9.52]	0.10 [7.59]	0.68 [2.57]	0.84 [4.08]
2000 controls	yes	yes	yes	yes
1790 controls	yes	yes	yes	yes
Observations	144	144	144	144
R-squared	0.57	0.56	0.49	0.39

Notes: See Notes to Table 3.

Table A5: Historical Land Values and Persistence of the Culture of Honor

	1	2	3	4	5	6	7	8
	Homicide rate		White Offender		Homicide rate		White Offender	
Population	All	South	All	South	All	South	All	South
Prop. SI 1790	-53.43*	-147.49	-37.01***	-36.42				
	[32.01]	[159.67]	[14.07]	[55.91]				
Prop. wood 1880	-2.85	-7.39	-2.10	-1.13	-0.36	-0.01	-0.31	-0.90
	[3.47]	[8.38]	[1.50]	[3.25]	[0.87]	[1.88]	[0.49]	[1.12]
Prop. SI 1790*Prop. wood	277.35*	780.81	161.38***	245.96*				
	[140.92]	[481.09]	[60.27]	[142.87]				
Prop. SI 2000					-15.25	-8.92	-17.49**	-24.11
					[12.88]	[29.61]	[7.63]	[18.05]
Prop. SI 2000*Prop. wood					96.15***	103.22**	48.30***	67.81**
					[26.38]	[48.36]	[14.27]	[28.16]
2000 controls	yes	yes	yes	yes	yes	yes	yes	yes
1790 controls	yes	yes	yes	yes	no	no	no	no
Regional dummies	yes	no	yes	no	yes	no	yes	no
Observations	142	55	142	55	2,295	1,067	2,295	1,067
R-squared	0.55	0.52	0.43	0.58	0.33	0.23	0.14	0.03

Notes: The table reports OLS estimates. The unit of observation is a county. All regressions are with a constant. Robust standard errors are reported in brackets. *** significantly different from 0 at the 1% level, ** significantly different from 0 at the 5% level, * significantly different from 0 at the 10% level. “Homicide rate” and “White offender” as in Table 3 “Prop. SI 1790” denotes the proportion of Scots or Irish settlers in the 1790 county population. “Prop. SI 2000” denotes the proportion of Americans of first or second Scots-Irish ancestry in the 2000 Census, as a proportion of the 2000 county population. “Prop. wood 1880” or “Prop. wood” is the share of unimproved wooden area over improved agricultural land in the 1840 Census. “2000 controls”: log of aggregate earnings, proportion of the population residing in urban areas, proportion of the population black, ethnic fragmentation, income Gini coefficient. “1790 controls”: number of slaves and population density in 1790.

Source: Columns 1 to 4: 1790, 1880 and 2000 US Censi, 2000 Census of State and Local Law enforcement agencies, UCR. Columns 5 to 8: 1880 and 2000 US Censi, 2000 Census of State and Local Law enforcement agencies, UCR.

Table A6: Falsification – Homicide and Other ancestry in 2000 Census

	1	2	3	4	5	6	7	8
	Homicide rate		White offender		Homicide rate		White offender	
Ancestry	England				Italy			
Border South	2.17**	0.44	0.94	0.58	0.17	-2.61	-0.28	-1.14
	[1.01]	[4.00]	[0.76]	[1.08]	[0.50]	[2.58]	[0.44]	[1.02]
Deep South	2.70***	2.06	2.97***	-0.08	2.38***	0.61	1.52***	-0.91
	[0.98]	[3.34]	[1.03]	[1.10]	[0.51]	[2.26]	[0.33]	[0.82]
West	0.81		1.21*		1.10		0.46	
	[0.82]		[0.65]		[0.68]		[0.55]	
Midwest	-0.07		-0.20		0.11		-0.10	
	[0.55]		[0.37]		[0.38]		[0.25]	
Prop. ancestry (see Col. header)	-3.70**	-8.40***	-1.97**	-4.68***	-1.14	-3.26	-1.10	-1.11
	[1.55]	[3.21]	[0.96]	[1.32]	[1.36]	[3.13]	[0.82]	[1.03]
Border South*Prop. ancestry	-10.37**	3.37	-4.48	-1.18	8.68	31.84	9.88	12.07
	[5.15]	[16.71]	[3.32]	[4.86]	[7.74]	[21.81]	[7.05]	[9.17]
Deep South*Prop. ancestry	-1.06	-6.35	-9.28	-0.26	0.97	-15.13	-7.85*	7.12
	[5.47]	[12.91]	[6.15]	[4.32]	[7.14]	[34.51]	[4.66]	[11.34]
West* Prop. ancestry	5.56*		0.97		11.83		11.27*	
	[3.12]		[2.06]		[8.20]		[5.91]	
Midwest*Prop. ancestry	1.17		1.74		-1.43		0.69	
	[2.41]		[1.39]		[3.18]		[2.41]	
2000 controls	yes	yes	yes	yes	yes	yes	yes	yes
1790 controls	yes	yes	yes	yes	yes	yes	yes	yes
Population/Sample	2000	1790	2000	1790	2000	1790	2000	1790
	Census	counties	Census	counties	Census	counties	Census	counties
Observations	2,839	142	2,839	142	2,839	142	2,839	142
R-squared	0.26	0.52	0.07	0.40	0.26	0.51	0.06	0.37

Notes: See Notes to Table 8.

Table A7: Cultural Attitudes – Falsification

	1	2	3	4	5	6
	Weapon at home		Confidence exec. branch fed. gov.		Confidence US Sup. Court	
Ancestry	England	Italy	England	Italy	England	Italy
Border South	0.18*** [0.010]	0.18*** [0.010]	0.00 [0.020]	0.02 [0.019]	-0.07*** [0.020]	-0.09*** [0.019]
Deep South	0.10*** [0.006]	0.09*** [0.006]	0.03** [0.013]	0.04*** [0.013]	-0.03*** [0.013]	-0.04*** [0.013]
West	0.06*** [0.007]	0.06*** [0.006]	-0.03** [0.014]	-0.02* [0.014]	-0.01 [0.014]	-0.01 [0.013]
Midwest	0.07*** [0.006]	0.07*** [0.006]	-0.03** [0.013]	-0.02* [0.013]	-0.01 [0.013]	-0.02 [0.013]
Ancestry (see Col. header)	0.02 [0.017]	-0.07*** [0.013]	0.03 [0.037]	0.06* [0.036]	0.10*** [0.036]	-0.01 [0.033]
Border South*Ancestry	0.00 [0.033]	-0.08 [0.106]	0.10 [0.064]	-0.21 [0.159]	-0.13** [0.065]	-0.04 [0.136]
Deep South*Ancestry	-0.02 [0.022]	0.02 [0.029]	0.01 [0.045]	-0.02 [0.060]	-0.07 [0.044]	0.21*** [0.059]
West*Ancestry	0.01 [0.022]	0.02 [0.027]	0.02 [0.047]	-0.10 [0.061]	-0.01 [0.044]	-0.06 [0.062]
Midwest*Ancestry	-0.01 [0.023]	0.01 [0.029]	0.03 [0.048]	-0.02 [0.068]	-0.04 [0.047]	0.07 [0.063]
Individual controls	yes	yes	yes	yes	yes	yes
Observations	39,553	39,553	26,334	26,334	26,030	26,030
R-squared	0.17	0.17	0.04	0.04	0.02	0.02
Value of dependent variable	0.25		0.86		1.18	

Notes: See Notes to Table 10.

Table A8: Coefficients over Time: 1980 to 2007 and 1904

Year	1 1980	2 1981	3 1982	4 1983	5 1984	6 1986	7 1987	8 1988	9 1990
Prop. SI	94.53 [0.01]	104.01 [0.01]	69.91 [0.01]	63.38 [0.14]	69.71 [0.18]	63.23 [0.12]	37.36 [0.18]	11.56 [0.80]	62.58 [0.12]
DS*Prop SI	182.59 [0.00]	110.24 [0.34]	181.55 [0.00]	68.35 [0.12]	20.27 [0.70]	85.51 [0.26]	52.75 [0.37]	146.52 [0.01]	90.54 [0.04]
Region dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	149	149	149	149	149	149	149	149	149
R-squared	0.04	0.06	0.05	0.05	0.05	0.05	0.04	0.03	0.05

Year	10 1991	11 1992	12 1993	13 1994	14 1995	15 1996	16 1997	17 1998	18 1999
Prop. SI	31.59 [0.38]	41.56 [0.17]	63.23 [0.03]	62.32 [0.03]	51.38 [0.12]	51.38 [0.12]	50.07 [0.09]	58.44 [0.03]	50.49 [0.01]
DS*Prop SI	17.97 [0.82]	45.46 [0.34]	89.67 [0.00]	166.25 [0.02]	159.07 [0.00]	159.07 [0.00]	37.48 [0.25]	89.56 [0.13]	55.41 [0.02]
Region dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	149	149	149	149	149	149	149	149	149
R-squared	0.06	0.04	0.05	0.05	0.05	0.05	0.04	0.05	0.05

Year	19 2000	20 2001	21 2002	22 2003	23 2004	24 2005	25 2006	26 2007	27 1904
Prop. SI	22.61 [0.23]	33.45 [0.19]	42.37 [0.02]	56.35 [0.06]	52.98 [0.01]	43.62 [0.08]	34.40 [0.34]	41.32 [0.14]	1403.96 [0.35]
DS*Prop SI	72.74 [0.00]	68.73 [0.015]	74.71 [0.01]	84.33 [0.12]	59.01 [0.12]	71.80 [0.015]	53.53 [0.18]	44.29 [0.12]	2204.91 [0.15]
Region dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	147	148	149	149	149	149	149	147	13
R-squared	0.04	0.04	0.05	0.05	0.06	0.06	0.05	0.06	

Notes: Robust standard errors. P-values in parenthesis. “Prop. SI” denotes the proportion of Scots or Irish settlers in the 1790 county population. Interaction with Border South included.

Source: UCR, 1904 Census of “Prisoners and Juvenile Delinquents in Institutions”.