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A History of Violence:

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

Pauline Grosjean *

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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 late 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 seem to aim at the defense of one's reputation. By contrast, the culture of honor deters violent crime against women. 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: it 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

Why is the South of the United States nearly twice as homicidal as the rest of the country?¹ Such a discrepancy seems very hard to reconcile with traditional determinants of interpersonal violence, such as income or institutional quality (Becker 1968, Ehrlich 1973). More recent economic analyses of crime such as Levitt (2004) and Levitt and Miles (2006) appear similarly unsuitable to explain the Southern homicide specificity, which is essentially a white offender phenomenon.² Some authors have suggested instead that the high Southern homicide rate is a product of cultural values condoning the use of lethal violence (Gastil 1971, Wyatt-Brown 1982, 2001). This paper explores the origins of the cultural factors underpinning interpersonal violence and the conditions under which they have persisted. I trace part of the Southern homicide specificity to the specific cultural, economic and institutional conditions of the US South in the 18th century. The idea is that economic and institutional conditions influence cultural values, which endure and underlie contemporary criminal behavior. In particular, 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, Edgerton 1992, Pigliaru 1959, Pitt-Rivers 1996).³ 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.

The 18th century US witnessed a large influx of settlers from Ulster - the so-called Scots-Irish- and from the Scottish Highlands, and they, together with many Germans, became the backcountry settlers. Ulster and the Scottish Highlands were lawless and traditionally

¹ The average homicide rate per 100,000 people between 2000 and 2007 in the South of the United States was 8.55 (Uniform Crime Reporting Program Data by the United States Department of Justice and Federal Bureau of Investigation and author's calculations).

² Over the period 1980-2007, white offender rates in the Deep South have been 2.8 times what they have been in Northern states. Black offender rates are 'only' 1.4 times higher, a difference that is no longer significant since the end of the 1980s. None of the explanatory 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 Northern part of the country rather than the South. Moreover, the analysis by Levitt (2004) and Levitt and Miles (2006) is mostly focused on explaining the sharp decline of homicide rates in the 1990s, a decline which was mainly confined to black offender rates: black offender rates declined 1.32 times more than white offender rates, which remained relatively stable over the period (source of data: UCR).

³ Robert 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. Antonio Pigliaru (1959) describes the codes of honor and the reliance on interpersonal violence among Sardinian herdsmen in a book with an evocative title: "La Vendetta Barbaricina Come Ordinamento Giuridico". Fernand Braudel (1949) describes the mountainous herding people of the Mediterranean rim, their reputation for violence and warfare and the lack of order and hierarchy in such societies.

pastoral, and they were among the most violent areas of Europe (O'Donnell 2005, Roth 2009). The institutional and economic conditions that settlers faced in the US South were conducive to interpersonal violence for similar reasons of economic vulnerability and institutional weakness. In a famous and debated hypothesis, Cohen and Nisbett (1994, 1996) argue 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 examine how much and under what circumstances Scot or Scots-Irish settlements explain contemporary homicide. Since most settlers from Ireland prior to the 1840s' Potato Famine were Scots-Irish and because Ulster is not differentiated from the rest of Ireland among recorded countries of origin, I identify Scots-Irish settlers from the only pre-1840 Census that contains information on countries of origin: the 1790 Census. Contemporary homicide data at the county level comes from the Uniform Crime Reporting (UCR) Program Data by the United States Department of Justice and Federal Bureau of Investigation. I find that Scot or Scots-Irish presence contributes to higher homicide and aggravated assaults today, but in the South only. Consistent with the culture of honor hypothesis, the effect is specific to white offenders and to a type of homicide that seems to aim at the defense of one's reputation: between acquaintances and perpetrated with a blunt object, which denotes spontaneity. By contrast, homicide in the context of sexual assaults and rape by white offenders are less likely in Southern counties settled by Scots-Irish settlers, suggesting a positive outcome of the culture of honor. Violence against women not only goes against male honor but may also be deterred by the fear of retaliation by relatives, as male honor extends to the family. Differences in pastoralism matter to explain homicide but only in the South and when present simultaneously with Scot or Scots-Irish settlements. In other words, violent cultural norms persist but not unconditionally. This contrasts with the Nisbett and Cohen hypothesis, which predicts that the North-South difference in homicide rates is due to pastoralism among the Scots-Irish relative to other settlers and to the greater presence of the Scots-Irish in the US South. The conditionality of the result may explain the shortcoming of previous literature on the Nisbett and Cohen hypothesis, which, by focusing on different factors in isolation of each other, has struggled to establish a robust link between ecological conditions⁴, specific groups of people or social organization⁵ alone and homicide.

⁴ Chu, Rivera and Loftin (2000) question the empirical validity of the link between pastoralism and homicide discussed in Reaves (1992).

⁵ Lee et al. (2007), Rivera, Chu and Loftin (2002) and Loftin and McDowall (2003).

If the culture of honor only survived in conditions specific to the South, the question that arises and that is investigated next is: What are these conditions? 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. A reason why the culture of honor only survived in the South may have to do with the weakness of the institutional environment, which provided fertile ground for reliance on violent private justice. Leeson (2009) describes how the Scots-Irish culture emerged as a response to lawlessness, intergroup banditry and large-scale cattle theft, which characterized, for many centuries, the Anglo-Scot border where the Scots-Irish originated. In the absence of formal law enforcement, honor and reputation were of central importance and provided the main enforcement mechanism of customary law.⁶ In the frontier South, also a lawless environment, the Scots-Irish culture of honor as a private justice system substitute for formal law enforcement may have provided the best adaptive response and become the prevailing norm.

Empirical results confirm that the Scots-Irish culture of honor has persisted specifically in areas of the US where formal institutions were weak. This is true overall, as well as within the South. Two proxies of historical institutional quality are used. Following Besley and Prat (2006) and Gentzkow et al. (2006), newspaper circulation, available in the 1840 Census, is used as a proxy for political competition and institutional quality. The main advantage of this variable is its availability at a very disaggregated level. Its main drawback is that it may not capture what should matter most: the quality of judicial institutions. The second, more direct proxy for court quality deals with retention procedures for state judges in the mid 19th century (Berkowitz and Clay, forthcoming).

The rest of the paper is devoted to investigating what underlies cultural persistence, in order to explain why Scots-Irish settlements of 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 proportions of Americans of Scots-Irish ancestry, as self-reported in the 2000 Census. This, again, is found only in the South. Because of institutional 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. Accordingly, Americans of Scots-Irish descent are associated with higher homicide only in areas where

⁶ 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).

formal institutions were weak, according to the two measures discussed above. However, because the quality of institutions has increased in the South over the last 200 years, the influence of Scots-Irish cultural norms should also have waned over time. Accordingly, using historical crime data from the beginning of the 20th century and UCR data since 1980, I find that the Scots-Irish culture of honor is slowly decaying over time. 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 impact of the Scots-Irish culture of honor has decayed at a rate of about 3.4% yearly since the beginning of the 1980s, when county level homicide data start to be available, a rate that is consistent with extrapolations of the 1904 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 related violence is causal. First, the results are robust to controlling for lawlessness and other contemporary determinants of crime, such as poverty, inequality, racial composition, ethnic fractionalization and police numbers and budgets. The results are also robust to controlling for county 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. Third, applying the approach by Altonji, Elder and Taber (2005) and Nunn and Wantchekon (forthcoming) shows that 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.

This paper complements recent studies that show how culture matters in explaining how historical events affect norms and beliefs such as trust (Guiso et al. 2008, Nunn and Wantchekon forthcoming, Tabellini 2008a and 2008b), and behavior such as fertility (Fernandez and Fogli 2007) or firm management practices (Bloom, Sadun and Van Reenen 2008). The contribution of this paper is to provide first steps in the empirical analysis of how culture co-evolves with formal institutions. The main message is not only that violent cultural norms are inheritable and persistent but, more importantly, that such cultural persistence is not unconditional. Culture is adaptive: the culture of honor thrived, and was transmitted to subsequent generations, only in areas with weak formal institutions. This suggests a complementarity between cultural and institutional persistence. The Scots-Irish influence also

shows signs of disappearance over time, in the face of economic and institutional convergence between North and South.

Section 2 provides the historical and conceptual framework. I discuss the factors underlying Scots-Irish violent cultural norms and how the environment that settlers faced in the US South may have led to the dominance of such norms. Sections 3 and 4 present the data, empirical methodology and the results, the robustness of which is investigated in Section 5. Section 6 discusses the determinants of selection of the culture of honor in the South. Section 7 analyzes cultural transmission. Section 8 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, the Ulster Scots, from the Roman Catholic Irish. The Ulster Scots originated in the Anglo-Scot borderlands⁷ 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) that brought Ulster, for the first time, under English domination. Political instability, religious and economic discrimination continued after the Plantation however. 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 for the Presbyterians 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

⁷ 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.

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 in Ulster. Such religious and economic discrimination were particularly detrimental to the Ulster Scots and provoked a first mass migration to the New World at the beginning of the 18th century. They first settled in New York, where they founded the Orange and Ulster counties. The first wave of migration to Pennsylvania occurred in 1717-1718. By 1738, Ulster Scots had made their way from Pennsylvania 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 Ulster Scots migrated to the Americas between 1717 and 1775. Prior to the 19th century, the vast majority of migrants from Ireland consisted of Ulster Scots. Protestants were only one-third of the population of Ireland, but represented 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 Bonnie Prince Charlie (Charles Edward Stuart) in 1745 as well as many Germans and Dutch. As a late and impoverished arriving group, Ulster and Highland Scots and, to a large extent, 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. The hilly terrain reinforced herding as the basis of the economy of the Scots and Ulster Scots, as it was often unsuitable for intensive agriculture.⁸

Although migration from Ireland consisted primarily of Ulster Scots prior to the 19th century, the mass migration that followed the 1840s’ Irish Potato Famine consisted mainly of Irish Catholics whose cultural and economic bases were very different. This newer wave of Irish Catholics often worked as laborers and tradesmen and typically settled in coastal urban centers before migrating to the interior to work on large-scale 19th century infrastructure projects.

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

Both Ireland and Scotland historically had high homicide rates. Political instability, disrespect for –English dominated- central government and the lack of a criminal law tradition were common explanatory factors. Lawlessness and violence had characterized the

⁸ There is a controversy in the literature as to the extent to which the Scots-Irish were a herding people. Evidence based on the constitution of exports shows that the Plantation did not greatly affect the characteristically pastoral nature of economic activity in Ulster (Clarke 1976). In America, even though the purely pastoralist character of the Scots-Irish may have been exaggerated by some, little doubt exists as to the rural nature of the settlements by the Scots-Irish and their engagement in herding sheep and rearing hogs (Leyburn 1962).

Anglo-Scot borderlands where the Ulster Scots originated for much of the 250 years during which Scotland and England were in open conflict with one another (roughly from 1296 to 1551). Ulster, the last Irish province to come under English domination, was particularly ravaged by the Nine Years War and was 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.⁹ This may have partly reflected the absence of any central authority within the clan systems and may have been influenced by pastoralism.¹⁰ Homicide rates in Ulster in the 1730s were around 10 per 100,000 (Roth 2009) and rates of killings in Ireland were twice as high as in England until well into the 20th century. Sectarian, political and agrarian violence were high (Mitchell 1979) but most of the killings originated in interpersonal arguments and seemed to aim at the maintenance of one's sense of honor (O' Donnell 2005). In the absence of formal law enforcement, honor and reputation were of central importance as enforcement mechanisms of customary law (Leeson 2009).¹¹

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 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 then¹² settled in the country”. McDonald and McWhiney (1975) also recount how “[the Scots-Irish herdsman] is deadly if provoked, and the readiest way to provoke him is to treat him or his kin disrespectfully; he never forgot or forgave an insult” (page 166). In 1782, St John de Crevecoeur described 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 support 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

⁹ 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.

¹⁰ Burnham (1979) describes how capital mobility in pastoral societies inhibits the development of political centralization.

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).

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.

1800. The Scots were nearly as violent: they represented 20% to 26% of homicide assailants in New England and Virginia respectively but only 12% of the population. Similarly high ratios of homicide assailants to population of Scots and Irish settlers persisted in the 19th century (Roth 2009).

2.3. *Conceptual Framework*

The premise of this paper lies in the relationship between lawlessness, economic vulnerability and interpersonal violence. The Weberian idea of the monopolization of violence by the state lies at the very heart of the modern conception of the state as a source of political order (Weber 1958). One role of the state is deterrence. In criminal behavior models such as Becker (1968) or Ehrlich (1973), agents refrain from crime and violence because of the fear of punishment. But the interplay between the state and interpersonal violence goes further than deterrence. Violence plays an essential role for the defense and enforcement of property rights in the absence of third party enforcement. Bates, Greif and Singh (2002) and Gonzales (2010) view the state as but one agent specialized in the protection of property rights. Protection of property rights by private coercion or by the state are just different equilibria. Interpersonal violence is a substitute for formal law and order.

If interpersonal violence is the means of defense and enforcement of property rights when the state is weak or inadequate, more violence is expected when resources are more easily expropriated. There lies the link between herding and violence. 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. Aggression and a willingness to kill can be essential to build a reputation for toughness and deter animal theft. 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; Edgerton 1992; Pitt-Rivers 1966).

'Culture' here is defined, following Greif (1994) as the "ideas and thoughts common to several individuals that govern interactions [...] and differ from knowledge in that they are not empirically discovered or analytically proved" (page 915). This conception of culture is very close to that of evolutionary anthropology, which views culture as pre-adaptive. Cultural norms are pre-set behaviors that save on the cost of developing new responses to changing environments (Richerson and Boyd 2005). Self-help justice and third party adjudication are alternative rules for dispute resolution, which are within the set of culturally transmitted norms of behavior (Paciotti and Richerson 2002). How lawlessness and economic vulnerability lead to the dominance of the former over the latter and to the emergence of a distinct culture - the culture of honor- can be explained by Elias' (1994) idea that cultural

norms reflect the social structure. Elias (1994) describes how 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 in the western world, which he refers to as the ‘civilizing process’.

To sum up, there are complementary explanations as to why the 18th century Scots-Irish and the Scots were more violent than other western Europeans. First, Ireland and Scotland were behind in the ‘civilizing process’ compared with other countries in which political centralization was more advanced. Second, ecological and economic theories predict that the Scots and the Irish, who relied more on herding, were more prone to interpersonal violence.

The conditions that settlers faced in the US were conducive to violence for similar reasons. State controllers (courts and sheriffs) were weak in the Antebellum South (Wyatt-Brown 2001), leaving little opportunity for individuals to resolve dispute through third-party adjudication. Besley, Persson and Sturm (2005) also identify conditions in the pre-Civil War South, which were conducive to restricted political competition and lower quality of political institutions. Berkowitz and Clay (2006, forthcoming) document 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) points to political instability during and after the Civil War as the foremost explanation for the divergence of Southern homicide patterns: “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” (page 339). It is argued here that the Scots-Irish culture of honor, which had emerged in the Anglo-Scot borderlands, Scotland and Ulster as, precisely, a response to lawlessness and economic vulnerability, provided the best adaptive response to such an environment of weak formal institutions and economic vulnerability. As such, it had the potential to become the prevailing cultural norm. Richerson and Boyd (2005) argue that the logic of natural selection applies to cultural traits, so that most adaptive traits will spread.¹³ Testable predictions of this interpretation are that the Scots-Irish culture should prevail in areas where institutions were

¹³ Paciotti and Richerson (2002) provide other examples, where the culture of certain groups with appropriately regulated cultures, 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 were weak.

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 part of this paper.

A natural question that arises is why should we expect to still find higher reliance on interpersonal violence in areas settled by the Scots-Irish, more than 200 years after such settlements.

One explanation is that such events are actually quite recent from the point of view of cultural evolution, i.e. that the Scots-Irish 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, 2008). Empirical evidence on the persistent effects on culture of the African slave trade (Nunn and Wantchekon), Ottoman domination (Grosjean 2011) or climatic conditions several centuries ago (Durante 2011) illustrates that indeed, cultural change is slow. A testable hypothesis of this channel 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, 2008), parental decisions to transmit cultural norms are determined by the payoff to different cultural norms in different environments. Because of institutional 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.¹⁴ The hypothesis here is that the Scots-Irish culture of honor was transmitted to subsequent generations only where formal judicial institutions were weak. Behind this argument is the idea that, even though self-help justice and formal law enforcement are substitutes, cultural and institutional persistence are complements. Of course, cultural norms may contribute to the persistence of inefficient institutions: for example, because they influence the behavior of jurors. Unfortunately, I am unable here to uncover the direction of causality between formal and informal (cultural) institutional persistence.

¹⁴ 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. Cultural persistence will also influence the behavior and attitudes of jurors, as another explanation why one should observe persistent differences in the treatment of different crimes.

3. Data

3.1. Crime Data

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 process of linking offenses to the characteristics of a person arrested is not perfect: there is no information on conviction and the number of arrests does not always coincide with the count of offenses. When this is the case, the lower of the values between arrests and offenses is considered.¹⁵

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 and understand the Southern homicide specificity, a white offender phenomenon (see Introduction).¹⁶ 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.¹⁷

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 (Section 7.3.). 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.

¹⁵ This results in a lower number of total offenses by categories of offenders than the total count of offenses.

¹⁶ This is the approach in most of the literature, such as Cohen and Nisbett (1994, 1996) and Rivera et al. (2002).

¹⁷ The percentages are expressed as proportions of homicides for which information on the relationship between offender and victim or weapon used are known.

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.¹⁸ 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-12.¹⁹ Figure 1 maps white offender homicide rates at the county level (see Figure A1 in Appendix for total homicide rates). 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 Data on 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 detailed 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.²⁰ 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 to the 1790 states boundaries, 13 according to contemporary boundaries.²¹ 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

¹⁸ I exclude Alaska and Hawaii.

¹⁹ The comparison of the two figures 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 the UNODC.

²⁰ The Scots-Irish are not identifiable by their last names, as has been argued by Berthoff (1986).

²¹ 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.

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 1 and 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. Figure 2 displays a map that combines data on the proportion of Scots or Scots-Irish in 1790 and the average white offender homicide rates between 2000 and 2007.

Important information on economic, farming and herding activity was recorded for the first time in the 1840 Census. A match with the 1790 Census is obtained in 148 counties.

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. The map in Figure 3 reveals concentrations of Americans of Scots-Irish ancestry in the mountain South and the Ohio River valley and pockets of concentration in Montana, Texas, Colorado and Nebraska.

4. Empirical Specification and Results

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 baseline equations are:

$$m_c = \beta_0 + \beta_1 SI_c + \beta_2 \mathit{reg} \dot{\mathit{m}}_c + \beta_3 X_c + \varepsilon_c \quad (1)$$

$$m_c = \gamma_0 + \gamma_1 SI_c + \gamma_2 \mathit{reg} \dot{\mathit{m}}_c + \gamma_3 \mathit{reg} \dot{\mathit{m}}_c * SI_c + \gamma_4 X_c + \xi_c \quad (2)$$

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 offenders. SI_c is the proportion of settlers from Scotland or Ireland in the total county population in the 1790 Census. $\mathit{reg} \dot{\mathit{m}}_c$ is a vector of regional dummies for Northern states (the excluded category), 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. Numbers of police officers and the log of the police budget per capita in 2000 are additional 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. 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.²² 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 only robust in the South of the US 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 slavery²³ and the segregation of whites and blacks at the time of their settlement. Accordingly, Scot or Scots-Irish settlements have no statistical relationship with homicide by black offenders.

Results in Table 3 indicate that, in contrast with the Nisbett and 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, when all contemporary controls are included. For white offender rates, the interaction with Border South is also positive and statistically significant at the 5% level when all 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.

²² Results of regressions without controls are identical when run on the subset of non-missing observations.

²³ 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).

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 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.²⁴

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. Columns 3 to 6 use the logged value of the proportion of Scots or Scots-Irish settlers (+1) at the county level. Columns 7 to 10 use the number of Scots or Scots-Irish settlers (+1) and Columns 11 to 14 use 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 (improved vs. unimproved land) and agricultural output taken from the 1840 Census as well as for mining discoveries at the state level.²⁵ The main result is also robust to controlling for interactions between regional dummies and all controls as well as to the inclusion of state fixed effects and to clustering standard errors at the state level. Table A2 in Appendix presents the results of some of these additional specifications.

4.3. Type of Crime

The culture of honor being a self-protection ethic, whose purpose is the defense of a reputation, it should predict homicide, as established above, and aggravated assaults, which is

²⁴ 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).

²⁵ I thank Mathieu Couttenier for providing the mining data.

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 reveal information on the motivation of homicide. It is more likely that homicides perpetrated in defense of one's reputation are spontaneous (O'Donnell 2005) and involve people who are not directly related but know one another. Accordingly, homicides that are more likely in Southern counties with a high proportion of Scots and 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 also deter violent sexual crime against women. First, it is often perceived as against a man's honor to attack a woman. Second, male honor extends to the family so that the fear of retaliation by male relatives should act as a deterrent. Table 5 presents the results of regressions in which the outcome variables are the annual average rape rate per 100,000 people by white offenders (Column 5 and 6) and the rate of homicide perpetrated in the context of rape and sex offenses (Columns 7 and 8). 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.

5. Robustness and Causality

The positive relationship between Scot or Irish presence in 1790 and contemporary homicide in the South is consistent with the hypothesis that specific cultural traits were adaptive in the specific environment of the South and persisted until today. The next Section will explore in more details the relationship between cultural persistence, economic vulnerability and institutional quality, but first, one has to establish that this relationship is not due to the influence of omitted variables that may be correlated both with Scot or Scots-Irish settlement and with subsequent lawlessness and violence. The first strategy consists in falsification tests. It has just been 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. The following subsection further shows that other crime and offenses, such as robberies, are not systematically higher in counties settled by more Scots or Scots-Irish. This provides evidence against the argument that there is something specific to counties that attracted higher proportions of Scots or Irish and that lead to indiscriminate crime and violence today. It must

also be noted here that the relationship between homicide and settlers in the South is specific to the Scots-Irish. All regressions control for population density in 1790 but it is also useful to check that the relationship does not hold for settlers of other countries. Table A3 in Appendix presents the results of specification (2) where settlers from England and Wales are considered as well as settlers from France, Germany or Holland. Their presence in the Border or Deep South is not significantly associated with homicide rates.

I provide in this section more evidence that the relationship between homicide and early settlements is causal. First, I show that the results are robust to controlling for a wide set of observable characteristics that could be associated with violence. Second, I assess the likelihood that the estimates are driven by unobserved heterogeneity across counties.

5.1. 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 in are counties in which general crime is higher, which 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 in the baseline specification described in Section 4, first individually, then together. For homicides by white offenders, the controls are offenses committed by whites only. The effect of Scot or Scots-Irish settlements on homicide rates is robust to the inclusion of all these controls. Moreover, when included as dependent variables, none of the considered offenses is significantly affected by Scot or Scots-Irish historical settlements, except for drunkenness in Northern states (See Table A4 in Appendix). This is an important additional result. It confirms that the legacy of the Scots-Irish is not lawlessness in general but rather a specific kind of lethal violence. The fact that not only the influence of Scots-Irish settlements on homicide is robust to controlling for other crime but also that crime and violence are not actually more prevalent in these countries shows that it is unlikely that the selection of Scots-Irish settlers to crime-ridden counties is driving the main result of this paper.

5.2. Selection on Unobservables

Following Altonji, Elder, and Taber (2005) and Nunn and Wantchekon (forthcoming), 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 South the ratio is actually negative, implying that adding controls actually makes the influence of Scot or Scots-Irish settlers more compelling.²⁶

6. Cultural Selection: 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 in New England as well (see Section 2). The relationship documented here indicates that the Scots-Irish culture of honor has persisted, but only in the South. This points to more subtle cultural transmission mechanisms than the simple Nisbett and Cohen hypothesis according to which, essentially, cultural traits were brought along by settlers, transmitted intact to the next generations and dictate violent behavior regardless of the current environment. Instead, it seems that cultural traits leading to the use of interpersonal violence have only survived under the specific conditions of the South. Why, and what are these conditions?

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. This Section investigates to what extent economic vulnerability and institutional quality explain whether and where the Scots-Irish culture of honor has persisted.

6.1. Herding and the Culture of Honor

Data on livestock per capita at the county level from the 1840 Census is matched to settlers' country of origin data in order to test whether the link between Scot or Scots-Irish settlers and homicide is associated with herding. The analysis deals with sheep and hogs, which were the main animals herded by the Scots and Scots-Irish (McDonald and McWhiney

²⁶ The ratios are obtained from the coefficients obtained in Table 3 as well as in 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.

1975). In Columns 1 and 6 of Table 7, the sum of sheep and hogs per capita is included as an independent variable. In Columns 2 and 7, interactions between herding and regional dummies are included to capture to what extent herding explains violence within different regions. Herding on its own does not contribute to violence in general, or in the South relatively to the North, or even within the South. Columns 3 and 8 explore to what extent herding is associated with more violence where the proportion of Scots or Scots-Irish settlers was higher. Again, the coefficients are not significantly different from zero, although positive. Columns 4 and 5 for overall homicide and Columns 9 and 10 for white offender rates perform the same analysis for the South and Deep South only, respectively. Within the South, as within the Deep South, the interaction between Scot or Scot-Irish settlers and herding is significant in explaining homicide today. In short, the influence of Scot or Scots-Irish settlements on homicide is more pronounced where herding was more prevalent, but only in the South. This is in contrast with the hypothesis spelled out by Nisbett and Cohen. The survival of the culture of honor is not due to the economic occupations and the cultural background of the settlers alone, as the effect is observed only in the South.

6.2. *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. 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. Section 2 discusses the relationship between interpersonal violence and the weakness of formal institutions. 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.

Testing directly the link between institutional quality and the persistence of the culture of honor is impaired by the lack of historical data on institutional quality at a disaggregated enough level. However, the 1840 Census contains information on newspaper circulation. Following Besley and Prat (2006) and Gentzkow et al. (2006), this is used as a proxy for institutional quality and political competition. Regressions displayed in Table 8 investigate the influence of the number of newspapers per capita (daily, weekly, or tri-weekly) on homicide and on the link between Scots-Irish settlements and homicide. The

average number of newspapers per capita in 1840 (*Newspapers*) in the counties included in the 1790 Census is: 10.64 in the Northern States, 8.94 in the Border South and 3.80 the Deep South. The main variable of interest is the interaction between *Newspapers* 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 where the number of newspapers, a proxy for institutional quality, was higher in 1840. Interestingly, this is true *everywhere* and not only within the South or Deep South only (in Columns 2, 3 and 5, 6 the regressions are run only in the South and Deep South).

The main advantage of the above variable is its availability at very disaggregated level. Its main drawback is that it may not capture what should matter most, i.e. the quality of judicial institutions. Court quality is more directly measured by judicial retention procedures. At the time period under consideration, state judges were either appointed or elected through partisan elections. Berkowitz and Clay (2006) argue that partisan retention elections are associated with lower court quality. A dummy variable indicating whether state judges are appointed through partisan elections in 1866 (*Retention Election*) is used as a proxy for historical court quality (Berkowitz and Clay, forthcoming) in regressions reported in Table 9. The presence of Scots or Scots-Irish settlers is positively associated with homicide rates only in states that had retention elections, but not in states that used other appointment methods (Column 1). Again, this is true everywhere as well as within Southern States (Column 2).²⁷ The effect is, however, only marginally statistically significant for white offender rates (Columns 3 and 4).

Additional results in Appendix use other proxies for institutional quality and confirm the result that the Scots-Irish culture of honor has survived only in areas where institutional quality was weaker. Table A5 show that the culture of honor persisted most particularly in southern counties with lower historical population density, where one could expect institutional development was slower and law enforcement more costly and difficult. Table A5 also shows that Scots-Irish settlements are associated with higher homicide today in southern counties with higher ethnic fragmentation in 1790.²⁸ Because incentives to develop and enforce formal property rights were higher where the value of land was higher, Table A6

²⁷ The South is considered as a whole since there is no variation within the Deep South.

²⁸ For a discussion of the link between ethnic fragmentation and institutional quality, see Easterly and Levine (1997).

also explores the relationship between the value of land, proxied (inversely) by the proportion of wooded area over agricultural land in 1840. Again, the results point in the same direction. Homicide is associated with Scots-Irish settlements only in areas where institutional quality was weak. This is true not only within the South but also overall. Lower institutional quality in the South may explain why the previous results picked up a significant effect of Scot or Scots-Irish settlements, alone or in combination with herding, in the South only.

7. Cultural persistence

So far, this paper has discussed whether and where homicide patterns are predicted by Scots-Irish settlements. The evidence reviewed so far is consistent with the hypothesis that Scots-Irish cultural norms survived where it paid off: in areas where formal institutions were weak and, where this is the case, most particularly where economic vulnerability was high. However, the question remains as to why we still observe such patterns more than 200 years after Scots-Irish settlements. Cultural transmission from parents to children generates hysteresis in the transmission of cultural norms. Such transmission should nevertheless be observed only where it pays off: in areas where formal institutional quality was low and is still likely to be low because of institutional persistence. However, because the quality of institutions has converged over the period, the influence of Scots-Irish cultural norms should wane over time. This Section investigates whether and where the Scots-Irish culture of violence was transmitted and its fading influence over time.

7.1. Cultural Transmission: Complementarity between Cultural and Institutional Persistence

One reason why we still observe a significant influence of Scot-Irish settlements in 1790 is due to the presence of the descendants of these settlers, who have internalized Scots-Irish cultural norms. 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, generates hysteresis that can explain the slow adaptation of cultural values to new economic environments.²⁹

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

²⁹ See Fernandez and Fogli (2009) in the context of work and fertility decisions, Tabellini (2008a and 2008b) for social trust, Hauk and Saez Marti (2001) for corruption.

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 Regressions are performed in turn on the entire 2000 Census population and on the subset that overlaps with the 1790 Census. Results are reported in Table 10. Homicide rates tend to be higher in counties with higher proportions of Americans of Scots-Irish ancestry (Column 1) but, again, the effect comes from Southern states. 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 interaction with Deep South is also positive and significant in the 1790 overlap subpopulation. For white offender rates, the interaction between Border South and Scots-Irish ancestry is always positive and statistically significant. The interaction between Deep South and Scots-Irish ancestry falls short of significance for the entire 2000 Census population but is positive and statistically significant at the 1% to 5% level in the 1790 sub-population. In the 2000 population, the coefficient on the interaction between Midwest and Scots-Irish ancestry is marginally statistically significant and positive for white offender rates but not overall homicide. Interestingly, this result is 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.

These results indicate that the Scot-Irish cultural norms were transmitted to subsequent generations, but only in the South. A reason why this could be is that violent cultural norms were transmitted only in areas where they paid off because of the enduring weakness of formal institutions. Berkowitz and Clay (2006, forthcoming) indeed show that the quality of judicial institutions is persistent over time. The question asked here is whether we observe that Americans of Scots-Irish ancestry are associated with more violence today in the same areas where judicial quality was and is likely to be still low. The regressions discussed in Section 6.2. are performed but with the proportion of American of Scots-Irish ancestry in 2000 instead of the proportion of Scots-Irish settlers in 1790. It shall be noted here that this results in a large increase in the size of the US population on which regressions are performed. Results are displayed in Columns 7 to 12 of Tables 8 and Columns 5 to 8 of Table 9. Americans of Scots-Irish ancestry in 2000 are associated with more homicide,

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 (F stat of 863) 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.

overall and by white offenders, but only in areas that had few newspapers per capita in 1840, and in states that had retention elections.

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.

This paper argues that if a culture of violence was selected in the South 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 here 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 11 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 explore whether American of self-reported Scots-Irish ancestry differ significantly in their attitude towards self-reliance and centralized institutions. Regressions are performed here at the individual level. The results confirm that Southerners 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). It is also worth noting here that there is no evidence in the data that out-migration rates for people of Scots-Irish ancestry was any different from out-migration rates for people of other European ancestry, such as English or German.³¹ The results of several falsification tests, which regress homicide rates or cultural attitudes on other ancestries, are included in Appendix (Tables A7 and A8). No consistent pattern is found.

7.2. 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.

³¹ Historical settlements in 1790 or 1900 do not have a different predicting power on contemporary populations of self-declared Scots-Irish ancestry compared with other European ancestries, such as English or German.

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 2007.³² Obtained coefficients and smoothed lowess regressions are plotted in Figure 4. The figure and associated regression results (see Appendix Table A9 for the full set of results) show that coefficients for the interactions between the proportion of Scot or Scots-Irish settlers in 1790 and regional dummies are slowly decreasing over time. The variation of homicide explained by Scots-Irish settlements in the Deep South starts from a much higher base and actually decreases slightly faster than in the North, where the coefficient is not significantly different from zero, apart from the first 3 years.³³ 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).

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 a 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 (See Appendix, Table A9, Column 27). These figures are in ballpark of the extrapolated coefficients, actually very closely so in the Deep South.

8. 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 by white offenders but only within the South. Moreover, differences in pastoralism matter but, again, only within the South and when they are present simultaneously with the Scots or Scots-Irish. The Scots-Irish culture of inter-personal violence, shaped by a history of

³² 1984 and 1989 are missing.

³³ No other control is included in this analysis.

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 are still carried by Southerners of Scots-Irish decent.

The relationship between Scots and Scots-Irish settlers and homicides 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 actually appear to deter 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 of this paper 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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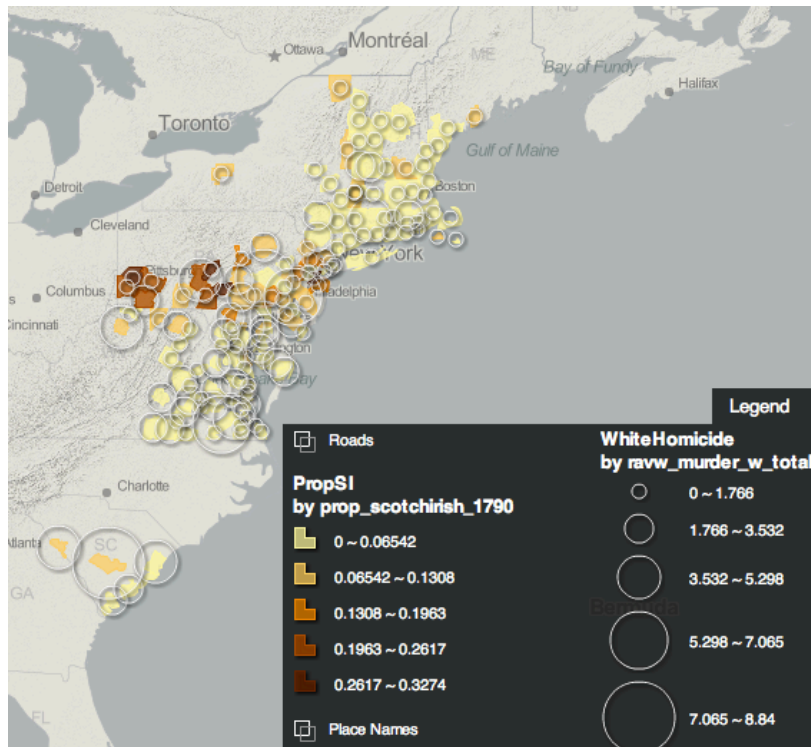
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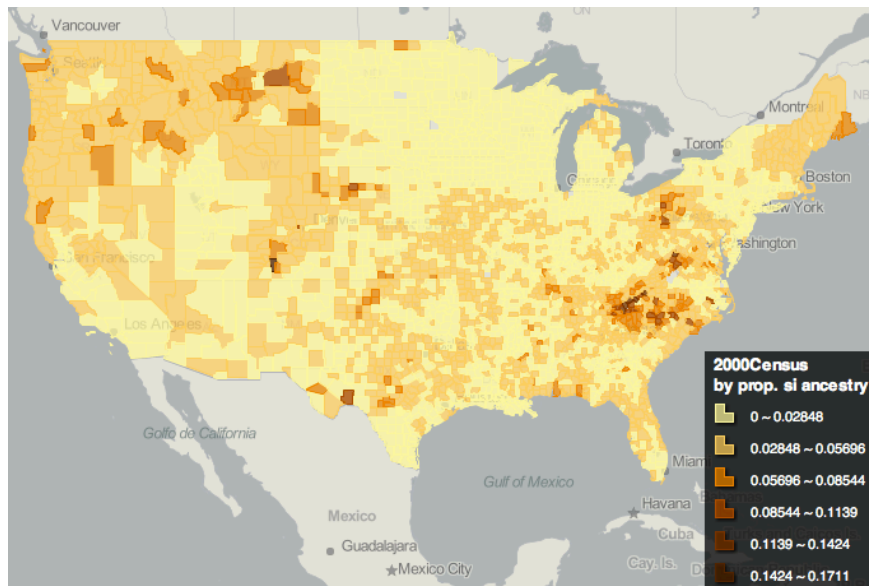
Figures and Tables

Figure 1: Proportion of Scots-Irish Settlers in 1790 and white offender homicide rate



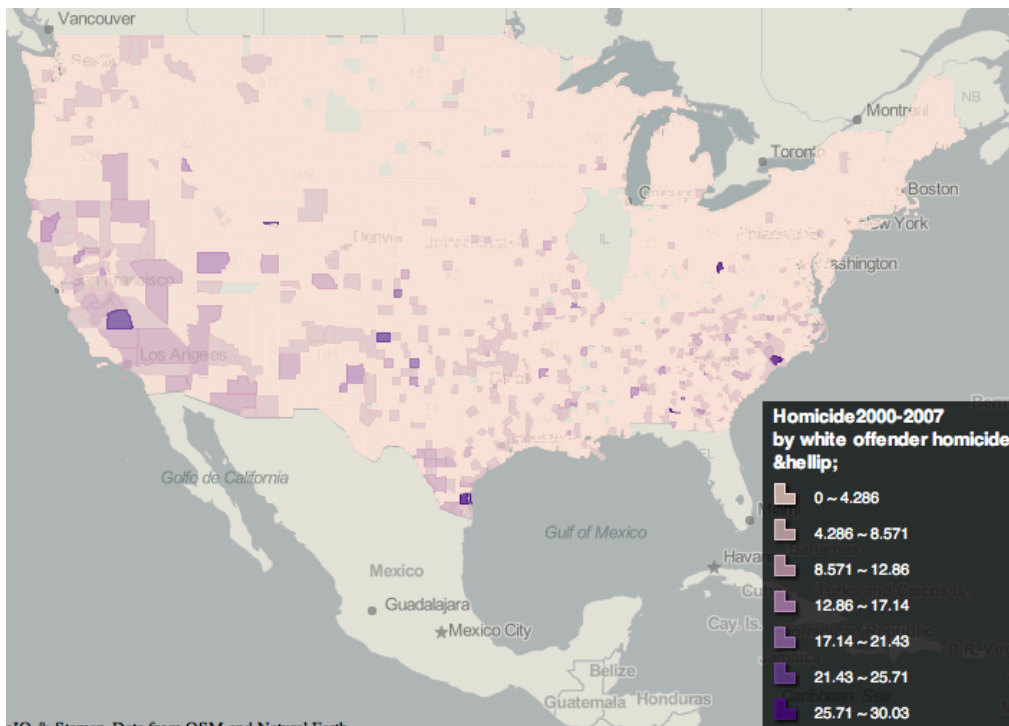
Source: 1790 US Census, UCR.

Figure 2: Proportion of Scots-Irish ancestry in 2000



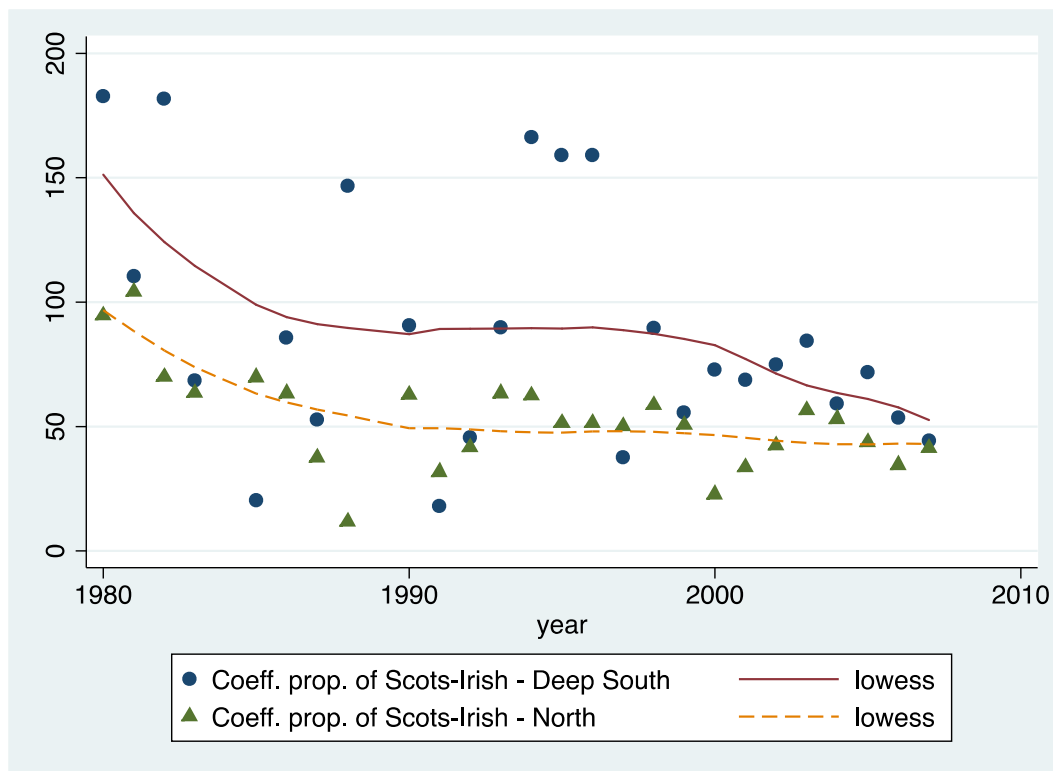
Source: 2000 US Census.

Figure 3: White offender homicide rate per 100,000: 2000-2007



Source: UCR.

Figure 4: The Evolution of the Culture of Honor over Time: 1980 – 2007



Source: UCR, 1790 US Census.

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Annual homicide rate per 100,000, 2000-2007 average	147	4.38	4.36	0	23.86
White offender homicide rate	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	1.00
Prop. Pop black 2000	147	0.13	0.15	0.01	0.64
Ethnic fragmentation index 2000	149	0.30	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

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

Table 2: Descriptive statistics, by region

Region	Annual homicide rate per 100,000, 2000-2007 average		White offender homicide rate		Proportion Scots or Irish 1790 or Scots-Irish ancestry in 2000 (% of the population)		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

Source: 1790 and 2000 US Censi, UCR.

Table 3: Homicides 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***	0.33	4.09**	-1.54	0.94***	0.25	0.14	-1.25**	3.19	3.33	0.93	1.19
	[0.96]	[1.20]	[2.01]	[2.02]	[0.32]	[0.38]	[0.58]	[0.59]	[5.03]	[6.40]	[6.89]	[8.40]
Deep South	4.51***	-1.12	-1.20	-5.62**	0.92***	-0.38	-1.12*	-2.11***	-3.33	-3.14	-6.09	-2.76
	[1.05]	[1.11]	[2.12]	[2.20]	[0.35]	[0.41]	[0.65]	[0.71]	[2.29]	[4.57]	[3.86]	[6.57]
Prop. SI 1790	7.20*	4.36	4.70	1.94	2.38	0.71	0.91	-0.58	28.14	22.33	25.56	21.49
	[4.20]	[3.15]	[3.68]	[2.86]	[1.58]	[1.56]	[1.41]	[1.43]	[23.27]	[24.39]	[24.63]	[25.68]
Border South*Prop. SI			-16.70	25.20			12.12	21.38**			34.84	32.05
			[21.98]	[20.77]			[9.27]	[8.99]			[67.63]	[66.70]
Deep South*Prop. SI			167.45***	120.42**			58.93***	43.66***			79.18	-18.28
			[63.15]	[56.70]			[20.31]	[16.71]			[72.72]	[97.99]
Socio-eco controls 2000	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes
Law enforcement 2000	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes
Pop. density 1790	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes
Slave pop 1790	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. “Socio-economic controls 2000” are: log of aggregate earnings, proportion of the population residing in urban areas, proportion of the population black, ethnic fragmentation and income Gini. “Law enforcement 2000” are: number of sworn officers per capita and log of the per capita budget of state and local law enforcement agencies. The excluded regional category is Northern states. The number of observations goes down from 147 to 143 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: Homicides and Scot or Scots-Irish settlers in 1790: standardized coefficients and robustness to other specifications

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Homicide rate	White offender	Homicide rate	White offender	Homicide rate	White offender	Homicide rate	White offender	Homicide rate	White offender	Homicide rate	White offender	Homicide rate	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 [0.18]	-0.36 [0.09]	5.29 [3.69]	2.34 [3.32]	0.91 [1.81]	-0.66 [1.67]	0.20 [0.19]	0.10 [0.19]	0.02 [0.10]	-0.01 [0.10]	0.51 [0.34]	0.10 [0.21]	0.07 [0.11]	-0.08 [0.09]
Inter. Border South	1.56 [1.29]	1.33** [0.56]		26.61 [22.85]		23.07** [9.75]		1.38 [2.30]		-0.34 [0.66]		0.35 [2.07]		-0.49 [0.65]
Inter. Deep South	7.47** [3.52]	2.71*** [1.04]		123.72** [59.13]		45.10** [17.49]		7.98** [3.06]		3.67*** [0.92]		2.80*** [1.03]		1.12*** [0.42]
Regional dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Socio-eco controls 2000	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Law enforcement 2000	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Pop. density 1790	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Slave pop 1790	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: Scot or Scots-Irish settlers in 1790 and type of crime

	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. Scots&Irish	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]
Socio-eco controls 2000	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Law enforcement controls 2000	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
County pop 1790	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Slave pop 1790	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. “Socio-economic controls 2000” and “Law enforcement 2000” are the usual controls (see Table 3).

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 additional controls for lawlessness and crime

	1	2	3	4	5	6	7	8
	Homicide rate				White offender			
Border South	-0.39	0.33	-1.28	-1.02	-1.19*	-1.04*	-0.76	-0.74
	[2.04]	[1.93]	[1.93]	[1.93]	[0.61]	[0.60]	[0.64]	[0.65]
Deep South	-3.72*	-4.94**	-1.59	-2.73	-1.95***	-1.99***	-1.45**	-1.41**
	[1.90]	[2.26]	[1.85]	[1.82]	[0.68]	[0.69]	[0.62]	[0.61]
Prop. SI 1790	2.28	1.07	-0.33	-0.97	-0.13	-0.48	-0.79	-0.76
	[2.83]	[2.89]	[2.29]	[2.57]	[1.42]	[1.45]	[1.34]	[1.36]
Border South*Prop. SI	11.45	12.23	19.47	17.72	18.98**	19.63**	12.10	11.86
	[22.71]	[21.11]	[22.57]	[21.82]	[9.40]	[8.99]	[11.25]	[11.53]
Deep South*Prop. SI	107.44**	117.27**	87.21*	89.67*	43.74**	44.27**	46.05***	46.18***
	[47.65]	[52.55]	[50.76]	[45.58]	[17.19]	[17.04]	[16.63]	[16.77]
Weapon carry, total or white	0.04***			0.02	0.02***			-0.00
	[0.01]			[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]
Robbery, total or white			0.08***	0.06***			0.07***	0.07***
			[0.01]	[0.02]			[0.01]	[0.02]
Socio-eco controls 2000	yes	yes	yes	yes	yes	yes	yes	yes
Law enforcement 2000	yes	yes	yes	yes	yes	yes	yes	yes
Pop density 1790	yes	yes	yes	yes	yes	yes	yes	yes
Slave pop 1790	yes	yes	yes	yes	yes	yes	yes	yes
Observations	144	144	144	144	144	144	144	144
R-squared	0.60	0.52	0.63	0.65	0.43	0.40	0.51	0.51

Notes: See Notes to Table 3. All offenses included as controls are yearly average rates for 2000-2007, per 100,000 people. White offender rates for each offense are used in Columns 5 to 8. Total rates are used in Columns 1 to 4.

Table 7: Scots-Irish settlers, herding and homicide

	1	2	Homicide rate			White offender				
Population	All	All	All	South	Deep South	All	All	All	South	Deep South
Sheep&Pigs pc	-0.20 [0.14]	-0.09 [0.14]	-0.26+ [0.18]	-4.97** [2.05]	-13.83*** [2.82]	-0.05 [0.05]	-0.02 [0.06]	-0.07 [0.08]	-2.16*** [0.65]	-2.87** [1.05]
BS*Sheep&Pigs		-1.17 [2.26]					0.70+ [0.48]			
DS*Sheep&Pigs		-2.18 [1.62]					-0.87+ [0.53]			
Prop. SI 1790			0.33 [4.54]	-59.34 [57.20]	-465.58*** [131.58]			-0.38 [2.59]	-32.46* [17.48]	-53.63 [41.93]
Prop SI*Sheep&Pigs			1.51 [1.36]	55.53* [27.59]	272.65*** [64.74]			0.47 [0.78]	24.00*** [8.18]	33.65+ [20.72]
Socio-eco controls 2000	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Law enforcement 2000	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Pop density 1790	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Slave pop 1790	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Regional dummies	yes	yes	yes	no	no	yes	yes	yes	no	no
Observations	143	143	143	56	37	143	143	143	56	37
R-squared	0.51	0.54	0.52	0.54	0.82	0.30	0.36	0.30	0.54	0.69

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 rates are yearly averages for 2000-2007, per 100,000 people. “White offender” is defined as the number of homicides for which a white (resp. black) 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. “Sheep&Pigs”: number of sheep and pigs per 1840 capita. BS: Border South; DS: Deep South. “Socio-economic controls 2000” and “Law enforcement 2000” are the usual controls (see Table 3). The excluded regional category is Northern states.

Source: 1790, 1840 and 2000 US Censi, 2000 Census of State and Local Law enforcement agencies, UCR

Table 8: Quality of institutions measured by newspaper circulation and persistence of the Scots-Irish culture of honor

	1	2	3	4	5	6	7	8	9	10	11	12
	Homicide rate			White offender			Homicide rate			White offender		
Population	All	South	DS	All	South	DS	All	South	DS	All	South	DS
Newspaper per capita	0.62**	0.87	3.00	0.25**	0.22	-0.53	0.13**	0.12	-0.15	0.02	0.05	-0.15
	[0.308]	[0.601]	[4.398]	[0.120]	[0.158]	[1.357]	[0.054]	[0.226]	[0.257]	[0.025]	[0.094]	[0.120]
Proportion SI 1790	127.47*	218.00*	790.61**	44.91**	70.31**	184.48+						
	[67.327]	[115.655]	[365.387]	[19.243]	[26.781]	[118.216]						
Prop SI 1790*Newspapers	-11.64*	-23.15*	-190.00*	-4.20**	-7.24**	-45.45						
	[6.343]	[13.548]	[99.336]	[1.839]	[3.324]	[34.398]						
Proportion SI 2000							104.01***	118.15***	83.79***	32.67***	42.47***	17.23
							[17.237]	[30.256]	[32.267]	[7.517]	[12.682]	[13.858]
Prop SI 2000*Newspapers							-10.47***	-13.68**	-9.78+	-3.62***	-4.74*	-2.23
							[1.957]	[6.202]	[6.812]	[0.892]	[2.433]	[2.624]
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	no	yes	no	no	yes	no	no	yes	no	no
Observations	144	54	37	144	54	37	1,661	903	677	1,661	903	677
R-squared	0.49	0.51	0.72	0.37	0.51	0.64	0.37	0.25	0.17	0.12	0.05	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 rates are yearly averages for 2000-2007, per 100,000 people. “White offender” is defined as the number of homicides for which a white offender has been arrested, over the white population. DS stands for Deep South. “Prop. SI 1790” or “Prop. SI” 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. “2000 controls” are: log of aggregate earnings, proportion of the population residing in urban areas, proportion of the population black, ethnic fragmentation and income Gini. “1790 controls” are number of slaves and population density in 1790. The excluded regional category is Northern states. Source: 1790, 1840 and 2000 US Censi, UCR.

Table 9: Quality of judiciary institutions and persistence of the Scots-Irish culture of honor

	1	2	3	4	5	6	7	8
	Homicide rate		White offender		Homicide rate		White offender	
	All	South	All	South	All	South	All	South
Prop. SI 1790	-2.06	22.93	-0.27	12.75+				
	[4.57]	[21.28]	[2.15]	[8.48]				
Retention Elections 1866	-2.87***		-0.93***		-0.41	-0.23	-0.51	-1.04
	[1.06]		[0.40]		[0.73]	[1.15]	[0.55]	[0.98]
Prop. SI 1790*Retention Elections	19.70+	123.55*	4.63	25.55+				
	[12.34]	[71.67]	[3.32]	[17.34]				
Prop. SI 2000					-3.85	-34.60	-20.30	-64.71*
					[11.92]	[30.69]	[14.51]	[38.50]
Prop. SI 2000*Retention Elections					54.42***	83.15***	31.11*	73.04*
					[18.00]	[34.66]	[16.28]	[41.01]
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	147	57	147	57	2,358	930	2,358	930
R-squared	0.22	0.52	0.12	0.48	0.28	0.14	0.07	0.04

Notes: See Notes to Table 8. Retention Elections is a dummy variable indicating whether states have partisan retention elections for state-level judicial appointments. States with partisan retention elections in 1866 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.

Source: 1790 and 2000 Census, UCR, Berkowitz and Clay (forthcoming).

Table 10: OLS Estimates of the relationship between homicide and Americans of Scots-Irish ancestry in 2000 Census

	1	2	3	4	5	6	7	8
	Homicide rate				White offender rate			
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]
Midwest*Prop. SI 2000		3.22 [17.67]				-17.43 [11.17]		
West*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
Sample	2000 Census		1790 overlap		2000 Census		1790 overlap	
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 socio-eco controls and law enforcement controls (see Table 3). “1790 controls” are the usual 1790 controls. The excluded regional category is Northern states.

BS: Border South: DC, DE, KY, MD, OK, WV. DS: Deep South: AL, AR, FL, GA, LA, MS, NC, SC, TX, VA. W: West: CA, OR, WA, ID, MT, WY, AZ, NM, CO, NV, UT. MW: Midwest: IL, IN, KS, MI, MN, MO, NE, ND, SD, OH, WI.

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

Table 11: Cultural attitudes of Americans of Scots-Irish ancestry

	1 Weapon at home	2	3 Confidence in federal government	4	5 Confidence in US Supreme Court	6
Border South	0.18*** [0.017]	0.18*** [0.017]	0.01 [0.008]	0.01 [0.009]	-0.08*** [0.025]	-0.08*** [0.024]
Deep South	0.10*** [0.020]	0.09*** [0.020]	0.04*** [0.006]	0.04*** [0.007]	-0.04 [0.024]	-0.03 [0.022]
West	0.06** [0.025]	0.06*** [0.023]	-0.03*** [0.007]	-0.03*** [0.004]	-0.01 [0.023]	-0.01 [0.022]
Midwest	0.07*** [0.020]	0.07*** [0.019]	-0.03*** [0.005]	-0.02*** [0.006]	-0.01 [0.023]	-0.01 [0.022]
Scot or Irish ancestry	0.01 [0.011]	-0.01** [0.005]	-0.01 [0.016]	0.02 [0.013]	0.00 [0.013]	0.05*** [0.015]
Border South*SI		0.01* [0.007]		-0.03 [0.022]		-0.07*** [0.019]
Deep South*SI		0.05*** [0.006]		-0.07*** [0.027]		-0.07* [0.039]
West*SI		0.01 [0.025]		0.02 [0.040]		-0.01 [0.029]
Midwest*SI		0.01 [0.008]		-0.02 [0.040]		-0.06*** [0.021]
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

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 1), only some confidence (2), or hardly any confidence at all (3) in [these institutions]?” “Confidence in Supreme Court”, respectively “Confidence in federal government”, is the answer to this question about the U.S. Supreme Court, respectively the executive branch of the federal government. “SI” denotes Scot or Irish self-declared 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.