

Attitudes Shaped by Violence*

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Abstract

We provide a theory of the spread and decline of violence in a structured population. Engaging in violence towards a particular target group of individuals shapes the attitudes of individuals in the perpetrating group. We focus on situations where violence has private costs and provides local benefits to the perpetrating group only socially. The free rider problem is overcome when individuals from the perpetrating group imitate members of their local community who received high payoffs in the previous period. When the typical benefits to violence are high in comparison to the private costs, violence spreads. Violence then begins to decline when these benefits become relatively low. Individuals who engage in violence start developing negative attitudes towards the target group, so as to minimize cognitive dissonance. Similarly, individuals who initially hold negative attitudes towards the target group, but do not engage in violence, gradually develop more favorable attitudes. A key prediction of our theory is that the attitudes produced by violence may last longer than the violence itself. We apply our theory to explain how the incentives for labor coercion against newly freed slaves in the postbellum U.S. South produced racially hostile attitudes among Southern whites, and how these attitudes may have been transmitted locally across generations, to present times. We discuss the evidence supporting this theory.

Key words: violence, attitudes, cognitive dissonance, racial and ethnic politics, slavery, labor coercion, local interaction, networks

Work in progress.

*This paper is still work in progress, and is best read alongside our related paper, [Acharya, Blackwell and Sen \(2013\)](#). We welcome all comments and suggestions.

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1 Introduction

A number of recent papers have argued that historical episodes of violence towards a particular group of individuals can have lasting impact on the attitudes held by descendants of the perpetrating group towards the victim group. For example, in [Acharya, Blackwell and Sen \(2013\)](#), we argue that the emancipation of slaves in 1865 produced both political and economic shocks in the U.S. South, and generated incentives for the Southern land-owning elite to engage in, and promote, violence against blacks in the postbellum years. This then produced racially hostile attitudes that have lasted to present times. Similarly, [Voigtländer and Voth \(2012\)](#) argue that the shock of the Black Death in Europe contributed to spreading the misbelief that Jews were responsible for poisoning the wells, which then led to a wave of Jewish pogroms across several European towns. They argue that this violence intensified anti-semitism in towns where such pogroms took place, and that these attitudes were passed down locally over a period of more than half a millennium. Other similar papers are discussed by [Nunn \(2009\)](#), who reviews the broader empirical literature on the long run effects of historical forces.

In this paper, we develop a model of how violence towards a particular group of individuals may spread once it starts, and how such violence may produce hostile attitudes among members of the perpetrating group towards the victim group. We focus on situations where violence has private costs and provides benefits to the perpetrating group only when large segments of local communities contribute to violence. This assumption implies a free rider problem: if violence has private costs but contributing to violence produces almost no marginal benefit, then individuals have no direct incentive to choose violence. We show that this free rider problem is overcome when individuals from the perpetrating group imitate members of the previous generation that lived in their local community and earned high payoffs. When the typical returns to violence are large in comparison to the private costs, violence spreads. Conversely, violence begins to decline when these returns become relatively low. Individuals who engage in violence start developing negative attitudes towards the victim group, so as to minimize cognitive dissonance. Similarly, individuals who initially hold negative attitudes towards the victim group, but do not engage in violence, gradually develop more favorable attitudes (also to minimize cognitive dissonance). A key prediction of our model, which helps explain some of the findings in the literature discussed above, is that the attitudes produced by violence may last longer than the violence itself.

After developing this theory generally, we apply it to the context of race-relations in the U.S. South during the post-Reconstruction period, a period that saw a sharp rise in decentralized violence against blacks ([Logan, 1954](#)). To apply our theory, we

further develop our model to include an explanation for how economic incentives for labor coercion following the abolition of chattel slavery in 1865 gave rise to anti-black violence in these postbellum years. The basic idea behind this application is as follows. The emancipation of slaves following the Civil War produced a major shock to the plantation economy. Instantly, the labor costs of white plantation owners and farmers rose, because they now had to pay their ex-slaves (closer to) market wages. This threatened the viability of the plantation economy, giving landowners an incentive to find new ways of suppressing farm wages. Engaging in, and promoting violence was one of many ways in which such wage-suppression took place; and, in fact, according to [Alston and Ferrie \(1993\)](#), it was the most important way. Because of the racial nature of slavery pre-1865, this violence was racially targeted. Whites then developed hostile attitudes towards blacks to justify this violence. These attitudes were then passed down from one generation to the next, probably through a variety of channels, including the one we highlight in our model: inter-generational socialization.

One of the key predictions of our model is the following “mechanization hypothesis.” As we have argued, the incentives for wage suppression led to a growth in violence and racially hostile attitudes in the decades after Reconstruction. But, as Southern agriculture became more mechanized, starting around 1930, the demand for farm labor began to drop, reducing the economic incentives for wage suppression and violence. Consequently, because of these technological developments in agriculture, our theory predicts that there is a period in time after which these reduced incentives for violence lead violence to decline. We show in our model that shortly after violence begins to decline, racially hostile attitudes also begin to decline. Hence, a key prediction of our theory, which we formally derive, is that for two otherwise similar Southern counties, the county that mechanizes quicker should on average have less racially hostile attitudes today. We then provide some empirical evidence that supports this prediction.

Our paper relates to several existing literatures. First, it relates to a recent empirical literature in the political economy of development, which emphasizes the importance of economic and social incentives in creating cultural norms and attitudes that tend to persist long after the historical forces that produced them disappear (e.g., [Nunn and Wantchekon, 2011](#); [Alesina, Giuliano and Nunn, 2013](#); [Jha, 2013](#)). Second, it contributes to a longstanding theoretical literature that highlights the importance of history and path-dependence in shaping contemporary social outcomes through cultural, institutional and evolutionary channels (e.g., [Boyd and Richerson, 2005, 1988](#); [Bowles and Gintis, 2005](#); [Bowles, 2006](#); [Tabellini, 2008](#)). Despite the growing work in these two literatures, there have been very few papers that connect

the insights of the theoretical literature to the findings of the empirical literature (one of the few papers is [Nunn, 2007](#)). Our paper provides a new connection between these two literatures by modeling the lasting effects of violence on attitudes.

Our paper also relates to the large and growing literature on behavioral game theory. First, it relates to the literature on bounded rationality started by [Simon \(1957\)](#). This is because we can interpret the agents in our model as responding to incentives, just as rational agents do, as they imitate others in hopes of achieving high payoffs themselves (see also [Eshel, Samuelson and Shaked, 1998](#)). However, because our agents imitate others instead of making individually optimal decisions given their choices, they are responding to incentives in only a limited way. Second, our paper also contributes to a growing literature that introduces psychology to game theory (see [Rabin, 1998](#), for a review of the early work). In our model, engaging in violence towards a particular group produces negative attitudes towards that group, because agents seek to minimize “cognitive dissonance,” as defined by [Festinger \(1962\)](#) and other social psychologists. Other models that study the effects of cognitive dissonance in different contexts include [Akerlof and Dickens \(1982\)](#) and [Rabin \(1994\)](#). However, unlike us, these authors study the impact of cognitive dissonance on actions rather than on attitudes. Finally, like previous work by [Boyd and Richerson \(2002\)](#) and [Eshel, Samuelson and Shaked \(1998\)](#), our paper shows that group-beneficial behavior can spread in a structured population, even in spite of the free-rider problem.

The rest of this paper is organized as follows. In Section 2, we develop the general model of how attitudes are shaped by violence. In Section 3, we give our main analytical result. Section 4 develops the application of our theory to labor coercion in the postbellum U.S. South. It also presents some supporting empirical and historical evidence for our theory. In Section 5, we discuss other possible applications and modeling challenges. Section 6 concludes.

2 Model

Consider a society that consists of two groups, A and B , that are geographically structured on an interval $\mathcal{R} = [-\frac{R}{2}, \frac{R}{2}]$. Located at each point on the interval, at any given period of time $t = 0, 1, 2, \dots, \infty$, is exactly one member of group A and one member of group B . We assume that each individual from both groups lives for exactly one period, after which he is replaced by exactly one offspring, who inherits both his location on the interval and his group membership. Since we interpret group A as the dominant group, while group B is a passive group, we will identify members of group A with their location on the interval, generically $r \in \mathcal{R}$. The assumption

that society is geographically structured means that we can define the notion of a community: specifically, we will refer to the interval $\mathcal{B}(r) = [r - \frac{\mu}{2}, r + \frac{\mu}{2}] \cap \mathcal{R}$ as the “local community” of r . We now describe the actions, payoff and behavioral assumptions of the model.

Actions and Payoffs. In each period, members of group A must decide whether or not to engage in violence against group B . Denote the choice by $\alpha_t(r) \in \{0, 1\}$ ($\alpha_t(r) = 1$ means that the member of group A located at $r \in \mathcal{R}$ chooses violence in period t ; $\alpha_t(r) = 0$ means that he does not). Members of group A must also choose the kind of attitude $a_t(r) \in [0, 1]$ to have towards group B . We interpret higher values of $a_t(r)$ as reflecting more hostile attitudes. If $\rho_t(r)$ is the fraction of individuals in r ’s local community that engage in violence against group B , then the “material payoff” received by the group A individual who lives at r is

$$u_t(r) = \pi_t(\rho_t(r)) - v \cdot \mathbf{1}_{\{\alpha_t(r)=1\}} \quad (1)$$

Here, $\pi_t(\rho_t(r))$ is a part of the material payoff that depends only on the aggregate violence against members of group B in r ’s local community. $v > 0$ is the material cost of violence, and $\mathbf{1}_{\{\alpha_t(r)=1\}}$ is an indicator that takes value 1 when r chooses violence. By assuming that $\pi_t(\cdot)$ depends only on the total amount of violence produced in a local community, we are implicitly assuming that violence can produce benefits to group A only socially.

In addition to the material payoffs described above, we assume that each member of group A incurs a “psychological cost” $\gamma \cdot |\alpha_t(r) - a_t(r)|$, where $\gamma > 0$ is a scale parameter. We interpret this cost as reflecting the “cognitive dissonance” associated with engaging in violence towards blacks but not holding sufficiently anti-black views, or holding anti-black views but not engaging in violence (Festinger, 1962). This implies that the total payoff for a member of group A located at r equals the material payoff minus the psychological cost, i.e.,

$$u_t(r) - \gamma \cdot |\alpha_t(r) - a_t(r)|. \quad (2)$$

Behavioral Assumptions. We assume that the dynamic linkage across periods arises from intergenerational socialization: each group A member r observes the material payoffs of group A members from his parent’s generation that lived in his local community, and then decides whether or not to engage in violence by “imitating” the individual from the previous generation that received the highest material pay-

off.¹ More formally, define the sets of group A members in r 's local community that respectively do not engage, and engage, in violence in period t to be

$$\begin{aligned}\mathcal{A}_t^0(r) &= \{\tilde{r} \in \mathcal{B}(r) : \alpha_t(\tilde{r}) = 0\} \\ \mathcal{A}_t^1(r) &= \{\tilde{r} \in \mathcal{B}(r) : \alpha_t(\tilde{r}) = 1\}\end{aligned}\tag{3}$$

We assume that the individual who lives at r in period $t + 1$ engages in violence if and only if the highest material payoff among individuals in his local community that commit violence in period t is larger than the highest material payoff among individuals who choose not to commit violence; in other words, if $\mathcal{A}_t^0(r)$ and $\mathcal{A}_t^1(r)$ are both nonempty, then

$$\alpha_{t+1}(r) = \begin{cases} 0 & \text{if } \sup u_t(\mathcal{A}_t^1(r)) < \sup u_t(\mathcal{A}_t^0(r)) \\ 1 & \text{if } \sup u_t(\mathcal{A}_t^1(r)) \geq \sup u_t(\mathcal{A}_t^0(r)) \end{cases}\tag{4}$$

and if $\mathcal{A}_t^0(r) = \emptyset$, then $\alpha_{t+1}(r) = 1$, while if $\mathcal{A}_t^1(r) = \emptyset$, then $\alpha_{t+1}(r) = 0$. The latter part of this assumption says that if every member of group A in r 's local community took the same action in the previous period, then r takes that action in the current period. This imitation rule is an ‘‘optimistic’’ imitation rule in the sense that r aspires to the highest material payoff received by his parent's neighbors and then imitates the individual who received the highest material payoff. It is analogous to, but differs from, the imitation rule in [Eshel, Samuelson and Shaked \(1998\)](#). These authors assume that agents compare the average (rather than highest) payoff associated with each action taken by individuals in their neighborhood in the previous period, when deciding what action to take in the current period.²

Finally, given the choice of violence, the group A individual located at r in period $t + 1$ optimally chooses his attitude $a_{t+1}(r)$ subject to the constraint

$$a_{t+1}(r) \in [a_t(r) - \kappa, a_t(r) + \kappa]\tag{5}$$

which says that the individual may choose a racial attitude that is at most a distance $\kappa > 0$ away from the the attitude of his parent. The interpretation is that children socialize with their parents, acquiring information and perspectives from this interaction, which in turn constrain their social beliefs.

¹Though we assume that imitation is based on agents' observations of material payoffs rather than total payoffs, our substantive results would not be different if instead we assumed that the psychological part of payoffs was also observable, and agents imitated on the basis of total payoffs. This analysis is available upon request.

²We could reproduce results analogous to those of [Eshel, Samuelson and Shaked \(1998\)](#) by assuming their imitation rule, but we assume the optimistic imitation rule instead because it facilitates a more parsimonious exposition of our main ideas.

An alternative modeling strategy would be to assume that attitudes, rather than actions, are imitated and then actions are chosen optimally given the individual's attitude. However, because we are interested in providing an endogenous theory for the path of attitudes, we assume that attitudes follow actions rather than the other way around. More importantly, this is also the perspective of an influential school of thought in social psychology, going back to the work of [Festinger \(1962\)](#).

3 Result

In this section, we give our main result, which characterizes the recursive paths of violence and attitudes in the society described in the previous section. To focus on the substantively interesting case where violence is initially increasing and then decreasing, we add two assumptions to the model as follows.

First, recall that we assumed that violence produces benefits to group A only socially, since $\pi_t(\cdot)$ depends only on the fraction $\rho_t(r)$ of individual's in r 's local community that engage in violence. To this, we add the following assumption.

ASSUMPTION 1: (i) $\pi_t(\rho)$ is continuous and strictly increasing in ρ for all t , and (ii) there exists $t^* > 0$ s.t. $v < \pi_t(1) - \pi_t(\frac{1}{2}) \forall t < t^*$ and $v > \pi_t(1) - \pi_t(\frac{1}{2}) \forall t \geq t^*$.

Part (i) of this assumption implies that the return to violence is increasing in the amount of violence produced in the local community. Part (ii) states that in early periods the cost of violence is relatively low, but in later periods it is high.

Second, note that if no individual engages in violence in the first period, then by our imitation rule no individual will ever engage in violence. So, we will assume that a concentrated mass, λ_0 , of individuals adopt violence in the first period, and focus on how violence may spread or decline after this point. Formally, our assumptions about the initial conditions of the model are as follows.

ASSUMPTION 2: (i) $\lambda_0 \geq \mu$, and (ii) $(\alpha_0(r), a_0(r)) = \begin{cases} (1, \kappa) & \text{if } r \in [-\frac{\lambda_0}{2}, \frac{\lambda_0}{2}] \\ (0, 0) & \text{otherwise} \end{cases}$

Given the assumption that a concentrated mass λ_0 of group A individuals adopt violence in the first period, part (i) of this assumption guarantees that there is at least one individual whose entire local community engages in violence in the first period. (This assumption is stronger than necessary for our purposes, as we explain following the statement of Theorem 1 below.) Part (ii) of the assumption states that the small community of individuals that adopt violence in the first period is centered at 0, and that these individuals have the same attitudes that they would have chosen

if their parents' attitudes were 0 (but, in fact, they are the first generation of group A individuals in the model).

Before stating our main result, note that for all periods $t < t^*$, there is a unique number $\rho_t^* \in (\frac{1}{2}, 1)$ satisfying $\pi_t(\rho_t^*) - v = \pi_t(\frac{1}{2})$, which follows from Assumption 1. In addition, in all that follows we will identify the “degenerate interval” $[0, 0]$ with the empty set \emptyset . Our main result below recursively characterizes the spread and decline of violence and attitudes in the population, over time.

THEOREM 1: Suppose that Assumptions 1 and 2 hold. If R is large enough, then the paths of violence and attitudes are recursively given by

$$(\alpha_{t+1}(r), a_{t+1}(r)) = \begin{cases} (1, \min\{a_t(r) + \kappa, 1\}) & \text{for all } r \in [-\frac{\lambda_{t+1}}{2}, \frac{\lambda_{t+1}}{2}] \\ (0, \max\{a_t(r) - \kappa, 0\}) & \text{for all } r \notin [-\frac{\lambda_{t+1}}{2}, \frac{\lambda_{t+1}}{2}] \end{cases} \quad (*)$$

$$\text{where } \lambda_{t+1} = \begin{cases} \lambda_t + 2\mu(1 - \rho_t^*) & \text{if } t < t^* \\ \max\{0, \lambda_t - \mu\} & \text{if } t \geq t^* \end{cases} \quad (\dagger)$$

Proof. See Appendix A.

Theorem 1 implies that the mass of individuals that adopt violence grows up to period t^* after which it declines. The theorem also implies that as group A individuals adopt violence toward group B , they also develop increasingly hostile attitudes towards that group. If the critical period t^* is sufficiently large (and ρ_t^* is sufficiently lower than 1 in all of these periods), then a large mass of group A individuals continue to develop increasingly hostile attitudes toward group B , even after violence begins to decline. Consequently, average attitudes may peak in a period $t^{**} > t^*$ after which they begin to decline. In particular, it will take longer for average attitudes to decline all the way to 0 than it will for the mass of individuals adopting violence to go to 0. We illustrate this in Section 4.2, where we apply the result of Theorem 1 to show that violence against newly freed slaves in the postbellum period of the American South might have produced racially hostile attitudes towards blacks that have lasted to the present.

The assumption that “ R is large enough” that appears in the statement of Theorem 1 can be made precise. Note that violence is increasing until period t^* ; thus the mass of individuals adopting violence peaks in period t^* . This mass is simply $\lambda_{t^*} = \lambda_0 + 2\mu \sum_{t < t^*} (1 - \rho_t^*)$. Thus, for there to be enough “space” for the mass of individuals adopting violence to grow this much, we require $R > \lambda_{t^*} + \mu$, which is an assumption on the primitives of the model. We state it as such.

ASSUMPTION 3: $R > \lambda_0 + \mu (1 + 2 \sum_{t < t^*} (1 - \rho_t^*))$.

Finally, note that our assumption that agents imitate members of their local community (of the previous generation), rather than optimally decide whether or not to engage in violence, is important for the result that violence can spread in the population. Because violence produces benefits only socially, whereas its costs are private, optimizing agents would succumb to the free-rider problem and choose not to contribute to violence. That said, our assumption that a small concentrated mass λ_0 of individuals choose violence in the first period is also important for this result. However, as we mentioned before, the assumption that $\lambda_0 \geq \mu$ is stronger than necessary for the result of Theorem 1 to hold. If $v < \pi_0(1) - \pi_0(\frac{1}{2})$ (as implied by Assumption 1), then there exists $\lambda^* \in (\frac{\mu}{2}, \mu)$ such that $v = \pi(\frac{\lambda^*}{\mu}) - \pi(\frac{1}{2})$. Theorem 1 holds when we replace the assumption that $\lambda_0 \geq \mu$ with the weaker assumption that $\lambda_0 \geq \lambda^*$. However, if $\lambda_0 < \lambda^*$ then the mass of group A individuals who adopt violence in the first period is too small for violence to be sustained, let alone spread, and it disappears completely from society.

4 An Application to the Postbellum U.S. South

In [Acharya, Blackwell and Sen \(2013\)](#), we showed that the prevalence of slavery in Southern counties in 1860 is a strong and robust predictor of the racial and political attitudes of Southern whites today. In that paper, we gave a variety of evidence against several possible explanations for this finding, and proposed a set of surviving theories that could potentially explain our set of results. One of our theories was that violence towards blacks expanded in the Southern countryside after slavery was abolished, in part because the Southern white elite had an incentive to promote violence to suppress black wages—essentially, a new form of labor coercion. Where there were more plantations, and more ex-slaves, there were greater incentives for such violence. This violence then generated racially hostile attitudes, which were passed down through generations. In this section, we motivate this theory with some historical evidence. We then develop the theory formally by extending the model of the previous section to the context of this application. Finally, we provide some new empirical evidence that supports a key prediction of this “labor coercion theory.”

4.1 Historical Evidence for Postbellum Labor Coercion

Immediately after the Civil War, two major institutional changes took place in the U.S. South: black slaves were freed, and the federal government attempted to provide them with political rights and protections, including the right to vote. As these

events were unfolding, Southern whites, especially those involved in the plantation economy, felt an increasing uncertainty regarding the security of their property and their political power, and began finding alternative methods of protecting their control over the scarce resources of the South. For example, they introduced Black Codes and Jim Crow laws (Klinkner and Smith, 2002). They also promoted white supremacist organizations like the Ku Klux Klan (KKK), which, with the support of Southern conservatives and the Democratic Party, created an environment of intimidation and violence against newly freed blacks, with the initial purpose of disfranchising them (Klinkner and Smith, 2002).³ Over time, this racial violence became increasingly intense, manifesting itself in acts such as lynchings and hate crimes.

Although the racial violence perpetrated by groups like the KKK was initially intended to prevent blacks from voting, this violence had important effects on the plantation economy, especially considering the large-scale changes experienced by the Southern rural labor market following the abolition of slavery in 1865 (Shapiro, 1988; Woodman, 1977, 1979). The emancipation of slaves generated a severe shock to agricultural labor market, raising the labor costs of plantation owners. In particular, it weakened the wage-bargaining position of white planters *vis-a-vis* black employees, who could now demand market wages, and more easily sell their labor elsewhere (Higgs, 1977; Alston and Kauffman, 2001; Wright, 1986). Racist violence, however, tempered this change by lowering the outside options of blacks, particularly by reducing their potential wages and mobility. This meant that racist violence gave white planters greater market power, through the opportunity to pay lower wages, or to substitute wages with valuable (though perhaps ostensible) protection for their farmhands against the violence (i.e., what Alston and Ferrie (1993) refer to as “paternalistic wage contracts”). At the same time, white planters themselves had an interest in promoting the violence that was being perpetrated against blacks by organizations like the KKK, precisely because of their need to secure cheap farm labor. Indeed, Alston and Ferrie (1993) write very clearly that “the disfranchisement of blacks and poor whites that helped create the South’s regime of social control could not have occurred without the cooperation of the white rural elite.”

Over time, anti-enticement laws and anti-vagrancy laws made it even harder for blacks to leave their jobs, further lowering the value of their outside options, and thus their wages (Naidu, 2010, 2012). Other forms of labor coercion (such as bonded

³By the turn of the century, other measures—such as poll taxes, residency requirements, white primaries, and literacy tests—were introduced as institutional mechanisms to suppress the black vote (Klinkner and Smith, 2002). But in the period just after the Civil War, before these institutional measures were adopted, the threat of violence was the most important institutional mechanism through which disfranchisement took place (Kousser, 1974).

labor) and exploitation (such as the criminal lease system) further expanded to take slavery’s place (Blackmon, 2008; Lichtenstein, 1996). On top of this, new labor and tenancy laws began to consistently favor the white Southern agricultural elites over blacks (Woodman, 1995). Finally, as Blackmon (2008, pp. 64) notes, “the South had a judicial tradition of using criminal courts to settle civil debts, and of treating a man’s labor as currency with which to pay fines and mortgages.” Blackmon (2008) describes how under this system of “peonage” (or “debt bondage”), many illiterate African Americans were randomly captured by rural whites, both rich and poor, who then falsely accused them of failing to pay their debts and used the court system to extract money or labor from them. By some estimates, nearly 40% of Southern blacks were imprisoned under peonage at the start of the 20th century (Blackmon, 2008).

Motivated by this evidence, we propose a theory in which Southern whites engage in violence with the purpose of suppressing black farm wages. Because blacks were increasingly mobile after 1865, we hypothesize that violence is effective in suppressing wages only if it is carried out socially, i.e. if enough members of the local community are complicit in carrying it out. If only a single farmer engages in violence towards his farmhand, then the farmhand may simply leave the plantation to find work elsewhere, and the violence becomes ineffective; but if large segments of the local community engage in violence, then the prospect of leaving the plantation to find work elsewhere becomes more fearful, and violence becomes effective in suppressing farm wages. This implies that violence produces benefits to the perpetrators only socially, as in the model of Section 3. We develop this application formally in the next section.

4.2 A Model of Wage-Suppression

Consider the following extension to the baseline setup in Section 3. Let group A represent a community of white farm owners, and let group B be the group of recently freed black slaves (now farmhands). Located at each point $r \in \mathcal{R}$ is exactly one plantation, where exactly one farmer and one farmhand reside. Whenever there is no confusion, we will identify both farmers and farmhands with their location on the interval, $r \in \mathcal{R}$. We assume that after farmers make their decisions of whether or not to engage in violence against blacks in their local community (for example, whether or not to join the KKK), both farmers and farmhands make economic decisions. The choice of farmers to engage in violence will have implications for these decisions. We explain these as follows.

Economic Decisions. In each period t , each farmhand r is endowed with a total amount of labor $\bar{L} > 0$ that he must allocate between two activities: farmwork, and

employment outside of the farm. For work outside the farm, he receives an external wage rate $w_t^o(r)$ per unit labor. For work on the farm, in each period t farmer r offers him a wage contract $(w_t(r), L_t(r))$ where $L_t(r) \leq \bar{L}$ is the amount of labor he requests from the farmhand at a wage of $w_t(r)$ per unit. The farmhand either accepts or rejects the offer. If he accepts, then he receives a payoff

$$w_t(r)L_t(r) + w_t^o(r)(\bar{L} - L_t(r)) \quad (6)$$

where the first term in this expression is what he earns from farmwork, and the second is what he earns from selling the remainder of his labor outside the farm. If he rejects, then he sells all of his labor outside the farm, so he receives a payoff $w_t^o(r)\bar{L}$.

By employing $L_t(r)$ units of the farmhand's labor on his plantation in period t , farmer r is able to produce $\min\{m_t L_t(r), Y\}$ units of output. Here, $Y > 0$ is a limit on the amount of output that a farmer can produce, as he is constrained, for example, by the size of his plot, which we assume is fixed through time and equal across plantations. m_t is the state of mechanization of agriculture in period t . Machines are a substitute for labor: with more tractors, for instance, the farmer requires less labor to produce output. Thus, farmer r 's profit in period t is

$$\min\{m_t L_t(r), Y\} - w_t(r)L_t(r). \quad (7)$$

The Economic Implications of Violence. If a farmer engages in violence, he contributes to lowering the external wage rate of local farmhands. Given that $\rho_t(r)$ is the fraction of farmers in r 's local community that engage in violence in period t , we assume that the outside wage rate for a farmhand living at r is

$$w_t^o(r) = (1 - \rho_t(r)) \bar{w} \quad (8)$$

where $\bar{w} > 0$. Thus, if all farmers in r 's local community engage in violence, then the outside wage rate for a farmhand living in plantation r is 0. If a zero mass of them engage in violence, then r 's outside wage rate is \bar{w} . r 's outside wage rate is decreasing in the proportion of farmers in his local community that engage in violence against blacks. Equation (8) above, therefore, represents a reduced form approach to modeling the idea that when there is more violence against blacks in the local community, the prospect of leaving the plantation to find work elsewhere becomes more fearful for farmhands.

One way to motivate equation (8) is as follows. Suppose a black farmhand who leaves the plantation to find work outside the farm (say, in a nearby city) may find work at a wage rate $\bar{w} > 0$, but there is also some chance that he will be harmed

along the way. The probability of being harmed is increasing in the proportion of farmers in the local community that engage in violence. Specifically, if the farmhand is located at r , then for each unit of labor that he attempts to sell outside of the farm, his probability of being harmed is $\rho_t(r)$; and if he is harmed, then he loses that labor unit, receiving a payoff of 0. Therefore, his expected wage rate per unit of labor that he attempts to sell outside of the farm is given by (8).

We end our description of the model by summarizing the timing of events within each period t . First, all farmers simultaneously decide whether or not to engage in violence, and what attitudes to have towards blacks. Then, each farmer r offers a feasible contract $(w_t(r), L_t(r))$ to his farmhand. Each farmhand r then either accepts or rejects the contract. Finally, economic activity takes place, all agents receive their payoffs, and the period ends.

4.3 The Paths of Violence and Racial Attitudes

Our goal in this section is to apply Theorem 1 to characterize the co-evolution of violence and attitudes. To facilitate a direct path to our main substantive results, we make the following assumption.

ASSUMPTION 4: (i) $Y \leq m_t \bar{L}$ for all t , and (ii) $\bar{w} \leq m_t$ for all t .

Part (i) of this assumption states that land is always the constraining factor, not labor. Part (ii) states that a farmhand's marginal product (up to output level Y) is always at least as large as his maximum outside wage rate. These assumptions guarantee that all farmers will always have a positive demand for farm labor, and they will always seek to produce the maximum possible Y units of output.

We say that the labor market is in “equilibrium” in period t if the profile of contracts offered, $\{(w_t(r), L_t(r))\}_{r \in \mathcal{R}}$, and the profile of decision rules for farmhands on which contracts to accept and which to reject in period t , constitute a subgame perfect equilibrium (SPE) in that period, given the choice for each farmer of whether or not to engage in violence (as implied by our imitation rule).⁴ We refer to such an SPE as a “labor market equilibrium.”

We can characterize the unique labor market equilibrium in any given period t , using standard arguments. Since farmers offer take-it-or-leave-it wage contracts, they possess all of the wage bargaining power, and can squeeze farmhands to their

⁴Since all players live for only one period (and, therefore, do not care about what happens in future periods), the sequence of strategy profiles that constitute period-by-period SPEs is also the unique SPE of the infinite horizon dynamic game.

reservation wage (see also [Bardhan and Udry, 1999](#), Ch. 6). In particular, if farmer r offers a wage rate $w_t(r)$ equal to the outside option $w_t^o(r)$ of his farmhand, then it is incentive compatible for the farmhand to accept the contract for any amount of labor requested. Assumption 4 above guarantees that each farmer r requests $L_t(r) = Y/m_t$ units of labor in period t . Therefore, we have the following result.

LEMMA 1: Under Assumption 4, the wage contracts that are offered and accepted in labor market equilibrium in period t are given by $(w_t^o(r), Y/m_t)$ for all r .

Lemma 1 implies that the fact that farmhands can work safely on the plantation, but risk being harmed for work outside the farm, results in a “protection premium” that is fully internalized by the farmer. Specifically, the equilibrium contract is “as if” the farmer provides the farmhand with protection of his labor on the farm in exchange for a premium $(\bar{w} - w_t^o(r))L_t(r)$, which is exactly equal to the worker’s surplus. [Alston and Ferrie \(1993\)](#) refer to the protection received by farmhands in exchange for this premium as a form of “paternalism.”

Lemma 1 enables us to write the profit to each farmer r as a function of the fraction $\rho_t(r)$ of farmers in his local community that engage in violence. Substituting the equilibrium contract from Lemma 1 into equation (7) and simplifying, we get

$$\pi_t(\rho_t(r)) = Y \left[1 - (1 - \rho_t(r)) \frac{\bar{w}}{m_t} \right] \quad (9)$$

which satisfies part (i) of Assumption 1. Part (ii), on the other hand, is satisfied if the following assumption holds.

ASSUMPTION 1': There exists $t^* > 0$ such that $v < \frac{1}{2}\bar{w}Y/m_t$ for all $t < t^*$ and $v > \frac{1}{2}\bar{w}Y/m_t$ for $t \geq t^*$.

The assumption says that the cost of violence is initially relatively small in comparison to typical farm wages, but in later periods it is high. It captures the idea that farming technology is improving with time, i.e. that $\{m_t\}$ is an increasing sequence. In particular, Assumption 1' is implied by the assumption that farming technology is initially low, but improves sufficiently with time. Finally, note that Assumption 1' is also consistent with the idea that there is a date $t > t^*$ after which the level of mechanization is constant.

In addition to these assumptions, we maintain Assumption 2. Given that in this application $\rho_t^* = \frac{1}{2} + \frac{vm_t}{\bar{w}Y}$ for all $t < t^*$, we can restate Assumption 3 as an assumption on the primitives of this applied model.

ASSUMPTION 3': $R > \lambda_0 + \mu \left(2t^* - 1 - \frac{2v}{\bar{w}Y} \sum_{t < t^*} m_t \right)$.

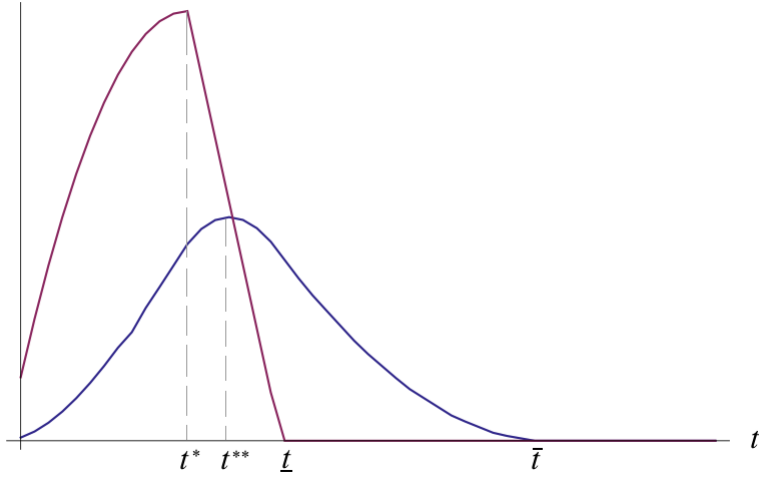


Figure 1: Paths of violence and racial attitudes for a numerical example. Average violence, $\bar{\alpha}_t$, in red and average attitudes, \bar{a}_t , in blue.

Finally, because our results in this section characterize the paths of “average violence” and “average attitudes” in society, we define these quantities as follows. These are, respectively,

$$\bar{\alpha}_t = \frac{1}{2R} \int_{r \in \mathcal{R}} \alpha_t(r) dr = \frac{\lambda_t}{2R}; \quad \bar{a}_t = \frac{1}{2R} \int_{r \in \mathcal{R}} a_t(r) dr \quad (10)$$

This follows because both $\alpha_t(r)$ and $a_t(r)$ will be measurable functions according to Theorem 1. Then, we have the following result, which states that under some natural conditions on the parameters, the average violence and average anti-black attitudes first rise, and then they both decline; but that the attitudes shaped by violence last longer than the violence itself.

PROPOSITION 1: Suppose Assumptions 1', 2, 3' and 4 hold, and the labor market is in equilibrium in every period. If κ is sufficiently small, t^* sufficiently large, and v is small in comparison to $m_t/\bar{w}Y$ for sufficiently many periods $t \leq t^*$, then

- (i) average violence $\bar{\alpha}_t$ is increasing in periods $t \leq t^*$, and then decreasing afterwards, until a period $\underline{t} > t^*$, after which it is forever 0.
- (ii) there exists a period t^{**} such that $t^* < t^{**} < \underline{t}$ and the average attitude \bar{a}_t is increasing until period t^{**} , then decreasing afterwards, until a period $\bar{t} > \underline{t}$, after which it is forever 0.

Proof. See Appendix B. \square

The proof of this result, in the Appendix, clarifies what we mean by κ being sufficiently small, t^* being sufficiently large and v being small in comparison to $m_t/\bar{w}Y$ for all $t \leq t^*$. We now provide a numerical example to depict the paths of average violence and average attitudes.

EXAMPLE— In Figure 1, we depict the paths of violence and racial attitudes for a numerical example. The model’s parameters can be written $(\theta, \{m_t\}, t^*)$, where $\theta = (\bar{L}, R, Y, \bar{w}, \lambda_0, \kappa, \mu, v)$. In this example, we set $\bar{L} = 10$, $R = Y = 1$, $\bar{w} = 0.5$, $\lambda_0 = \mu = 0.1$, $\kappa = 0.05$, $v = 0.025$ and $m_t = 0.8(t + 1)$ for $t = 0, \dots, 18$ and $m_t = 16$ for all $t > 18$. It is easy to verify that these parameters satisfy Assumptions 1’, 2, 3’ and 4, with $t^* = 12$. Figure 1 shows that average violence, $\bar{\alpha}_t$, in red, first rises and peaks in period $t^* = 12$, after which it declines to 0 in period $\bar{t} = 19$. The average attitude, \bar{a}_t , in blue, first rises and peaks in period $t^{**} = 15$, after which it declines to 0 in period $\bar{t} = 37$. \square

Finally, we end this section with a remark about the model’s interpretation. When taken literally, the model suggests that it is only the descendants of former slaveholders that should hold racially hostile attitudes. Of course, this is a consequence of the model’s abstraction, since the model does not even incorporate whites who are not plantation owners (such as white farmhands). In [Acharya, Blackwell and Sen \(2013\)](#), we argued that local elites, such as former slaveholders, were likely to have spread racially hostile attitudes to other local non-elite whites as well, *a la* [Zaller \(1992\)](#). However, we do not provide a formal theory of how this might occur, since a parsimonious model of how elites influence mass behavior has yet to be developed (and is certainly beyond the scope of this paper). Nevertheless, we do not deny that this is likely to be a very important part of the explanation for why anti-black violence became so prevalent in the South, for both political and economic reasons.

That said, there remains the question of why poor white farmhands would support wage suppression if white labor and black labor are substitutes, linking whites’ farm wages with blacks’ wages. Indeed, there is some evidence that violence took place against poor whites as well ([Kousser, 1974](#)), and that in some places, poor whites who recognized the effects of black violence on their own wages opposed violence against blacks ([Alston and Ferrie, 1999](#)). On the other hand, [Blackmon \(2008\)](#) documents several instances where poor whites would abduct and return runaway black farmhands to their employers, in exchange for a bounty, even well into the early 20th century. Similarly, [Blackmon \(2008\)](#) suggests that many of the false accusations of debt-default against blacks were leveled by poor whites, to extract money or labor through peonage or the threat of incarceration and convict-leasing. This evidence

suggests that several poor whites were complicit with the Southern white elite in promoting violence against blacks. Consequently, one can think of a “plantation” r in our model as representing a small sub-community of elite and non-elites, led by a white elite whose incentives determine the behavior attitudes of the other non-elite whites in his community.

4.4 Empirical Implications

In this section, we use the characterization of the paths of violence and attitudes from the previous section, to generate two new empirical predictions.

Suppose that all Southern counties have n precincts, but differ in the number of former slave-holding precincts. The society modeled in the previous section represents one slaveholding precinct. Assume that the parameters $(\theta, \{m_t\}, t^*)$ are the same for all former slaveholding precincts in a county j , and denote the parameters for this county by $(\theta_j, \{m_{t,j}\}, t_j^*)$. Let $k_j \leq n$ denote the number of former slave-holding precincts in a county j , with $k_j > 0$. Assume that the mass of white population living in each of the remaining $n - k_j$ precincts of the county is also R , but there are no plantations, so no former-slaves, in these precincts. Consequently, assume that the choice of violence and attitudes of all individuals r in all of these non-slaveholding precincts is always $(\alpha_t(r), a_t(r)) = (0, 0)$ for all individuals r and all periods t . This implies that the average violence and average attitude in the county in period t are

$$\bar{\alpha}_{t,j} = \left(\frac{k_j}{n}\right) \bar{\alpha}_t(\theta_j, \{m_{t,j}\}, t_j^*); \quad \bar{a}_{t,j} = \left(\frac{k_j}{n}\right) \bar{a}_t(\theta_j, \{m_{t,j}\}, t_j^*) \quad (11)$$

where we have written $\bar{\alpha}_t$ and \bar{a}_t for each of the identical former slaveholding precincts as functions of the parameters, to emphasize this dependence. Obviously, the quantities $\underline{t}_j = \underline{t}(\theta_j, \{m_{t,j}\}, t_j^*)$, $t_j^{**} = t^{**}(\theta_j, \{m_{t,j}\}, t_j^*)$ and $\bar{t}_j = \bar{t}(\theta_j, \{m_{t,j}\}, t_j^*)$ defined in Proposition 1 will also depend on the parameters. Clearly $\bar{\alpha}_{t,j}$ and $\bar{a}_{t,j}$ follow similar paths as $\bar{\alpha}_t$ and \bar{a}_t , characterized in Proposition 1, except that their magnitudes are scaled by k_j/n . Then, immediately, we have the following result.

PROPOSITION 2: Consider two counties, 1 and 2, with the same parameters, $(\theta_1, \{m_{t,1}\}, t_1^*) = (\theta_2, \{m_{t,2}\}, t_2^*) = (\theta, \{m_t\}, t^*)$ for each former slaveholding precinct, which satisfy the hypothesis of Proposition 1. Suppose the two counties have different numbers of former-slaveholding precincts, $k_1 > k_2$. Then $\underline{t}_1 = \underline{t}_2 = \underline{t}$ and $\bar{t}_1 = \bar{t}_2 = \bar{t}$. Moreover, the average violence is greater in county 1 than in county 2 in periods $t < \underline{t}$ (i.e., $\bar{\alpha}_{t,1} > \bar{\alpha}_{t,2}$, for all $t < \underline{t}$) and equal to 0 in both counties in periods $t \geq \underline{t}$. The average attitude is higher in county 1 than in county 2 in periods $t < \bar{t}$ (i.e., $\bar{a}_{t,1} > \bar{a}_{t,2}$, for all $t < \bar{t}$) and equal to 0 in both counties in periods $t \geq \bar{t}$.

This result is straightforward, and follows immediately from Proposition 1 and the assumption that $k_1 > k_2$. The proposition has two main empirical implications. First, it implies that, conditional on county characteristics that determine the parameters $(\theta, \{m_t\}, t^*)$, we should expect to see greater racial violence against blacks in the decades after Reconstruction in counties that had high slave concentrations before emancipation. In [Acharya, Blackwell and Sen \(2013\)](#), we confirmed this prediction by showing that the black lynching rate between 1882 and 1930 was higher in counties that had higher slave proportions in 1860. We also showed that blacks who lived in such counties did not fare as well on a number of economic dimensions than blacks in other counties. In particular, the share of black tenant farms in 1925 was higher in counties that had high slave proportions in 1860, while the share of black owned farms was lower. Also, the average monetary value of black farms was lower. This evidence, though very indirect, is consistent with the theory of labor coercion that we have developed here.

Second, Proposition 2 also implies that we should expect to see more racially hostile attitudes (among whites, towards blacks) over a longer time horizon in counties that had higher slave proportions in 1860. In [Acharya, Blackwell and Sen \(2013\)](#), we find strong evidence for this prediction as well. We show that whites who currently live in high slave proportion counties on average express greater “racial resentment” towards blacks (as operationalized by [Kinder and Sears, 1981](#)) than whites who currently live elsewhere in the South. We also show that whites who currently live in these former slave-holding counties are on average more conservative, according to partisan identification as well as their reported views on affirmative action policies, than whites who live elsewhere. On the other hand, white attitudes on other issues such as gay marriage, abortion, and protecting the environment at the cost of jobs, do not vary with slave proportions in 1860. All in all, we have strong, though somewhat indirect, evidence confirming the predictions of Proposition 2.

Our model of labor coercion also implies a new testable prediction that we call the “mechanization hypothesis,” and derive as follows. Suppose that there are two counties, $j = 1, 2$, whose parameters satisfy the following assumption.

ASSUMPTION 5: $\theta_1 = \theta_2$, $k_1 = k_2$, and $m_{t,1} > m_{t,2}$ for all t .

According to this assumption, the two counties have the same proportions of former slaves, and are otherwise identical except that county 1 mechanizes quicker than county 2. Then, we have the following prediction.

PROPOSITION 3: Consider two counties, 1 and 2, whose parameters $(\theta_1, \{m_{t,1}\}, t_1^*)$ and $(\theta_2, \{m_{t,2}\}, t_2^*)$ satisfy the hypothesis of Proposition 1, as well as Assumption 5.

Then, average violence is lower in county 1 than in county 2 in periods $t = 1, \dots, \bar{t}_2 - 1$ (i.e., $\bar{\alpha}_{t,1} < \bar{\alpha}_{t,2}$ for all $t = 1, \dots, \bar{t}_2 - 1$), and equal to 0 in both counties in periods $t \geq \bar{t}_2$. Average attitudes are lower in county 1 than in county 2 in periods $t = 1, \dots, \bar{t}_2 - 1$ (i.e., $\bar{a}_{t,1} < \bar{a}_{t,2}$ for all $t = 1, \dots, \bar{t}_2 - 1$), and they are equal to 0 in both counties in periods $t \geq \bar{t}_2$.

Proof: See Appendix C. \square

According to Proposition 3, the county that mechanizes quicker will have lower average anti-black attitudes among whites, for a sustained period of time after violence peaks. The intuition for this is as follows. Faster mechanization implies a reduced demand for black farm labor, since machines, such as tractors, more quickly replace farm workers. In particular, the benefits to white plantation owners from suppressing black farm wages through violence are more quickly diminishing. This in turn implies that the incentives for violence are lower. Thus, counties that mechanize quicker see less violence against blacks. In turn, according to our theory, less violence produces less anti-black attitudes in both the short run and the medium run. We refer to this hypothesis as the “mechanization hypothesis.” We provide some new empirical evidence for this prediction in the next section.

4.5 Evidence for the Mechanization Hypothesis

Our theory of labor coercion rests in large part on the fact that, historically, cotton was a labor intensive crop. Large plantations were economically feasible in several Southern precincts, particularly those of the “Black Belt,” primarily because slaves provided labor at very low costs. As we have argued, once emancipation ended the ready supply of cheap labor for white planters, these landowners were pressed to find new ways to keep labor costs as low as possible. For the cotton business model to survive, in other words, white elites quickly had to find access to low-cost labor. This was particularly the case in the decades after the Civil War.

By the 1930’s and 1940’s, however, technological advancements and environmental shocks (like the Mississippi flood of 1927) led to the start of rapid mechanization in Southern agriculture (Hornbeck and Naidu, 2013). Mechanization made agriculture a less labor-intensive economic activity, driving down the demand for farm-labor and, thus, the need for labor coercion and the threat of violence against blacks that whites used to support it (Alston and Ferrie, 1993; Street, 1972; Day, 1967). Consequently, mechanization eroded the original socio-economic rationale for anti-black attitudes that were produced under the previous social order. Given that our theory rests on

	Prop Democrat	Affirm. Action	Racial Resentment
	(1)	(2)	(3)
Prop. Slave, 1860	-0.176** (0.063)	-0.136* (0.057)	0.684** (0.230)
Tractors, 1940	0.290 (0.411)	0.971** (0.373)	-3.487* (1.496)
Prop Slave × Tractors 1940	1.722** (0.513)	1.125* (0.466)	-6.422** (1.852)
State Fixed Effects	✓	✓	✓
1860 Covariates	✓	✓	✓
New Deal & Log 1930 Pop.	✓	✓	✓
Tractors, 1925 & 1930	✓	✓	✓
N	777	777	672
R ²	0.312	0.225	0.236

*p < .05; **p < .01

Table 1: How the effect of slavery varies by the degree of mechanization, as measured by the number of tractors per 100,000 acres of land in 1940. All three models are weighted least squares, with the within-county sample size as the weights. Standard errors in parentheses.

the economic need for labor coercion, this means that we should see differential degrees of decay in anti-black attitudes depending on the time that mechanization took place in various parts of the South. Specifically, the effect of slave prevalence on white attitudes should be weaker in counties that mechanized earlier; in those areas, there were weaker reasons for racially hostile attitudes because of the diminished demand for inexpensive black labor brought about by the mechanization of agriculture. This is exactly our “mechanization hypothesis” formalized in Proposition 3 above.

In columns (1), (2) and (3) of Table 1, this is exactly what we see. Here, we take our unit of analysis to be the county, and study the cross-section of Southern counties, regressing three outcome variables of interest from [Acharya, Blackwell and Sen \(2013\)](#) on the proportion of that county’s 1860 population that were slaves, the number of tractors per 100,000 acres of agricultural land in the county in 1940, an interaction term, and various controls. The outcome variables are modern era (i.e., post-2000) measures of the proportion of a county’s population identifying as Democrat, the proportion of the county’s population that opposes affirmative action policies, and the proportion of the county’s population that expresses “racial resentment” towards blacks. The sources and precise definitions of these outcome measures are described in [Acharya, Blackwell and Sen \(2013\)](#). Given the fact that after the realignment of the

1960’s, the Democratic Party became the party supporting Civil Rights legislation and affirmative action—policies seen as favoring African Americans—the first two outcome measures serve as imperfect political proxies for racial attitudes, while the third measure of racial resentment is more direct.

To help identify the effects of slavery and mechanization, our models include state fixed effects and a number of “1860 Covariates” described in detail in [Acharya, Blackwell and Sen \(2013\)](#).⁵ We also control for the log of New Deal spending per capita in the county, the log of the county’s 1930 population, and the number of tractors per 100,000 acres of agricultural land in the county in 1925 and 1930. All of these controls are from the U.S. Census or U.S. Agricultural Census ([Haines and ICPSR, 2010](#)). Proportion slave in 1860 by modern county is from [O’Connell \(2012\)](#).

Our method follows [Hornbeck and Naidu \(2013\)](#) in using the number of tractors as a proxy for mechanization in 1940, which we collect from the 1940 Agricultural Census ([Haines and ICPSR, 2010](#)). Note that this is an early form of mechanization since 1940 slightly pre-dates the period that saw the most rapid mechanization of Southern agriculture.⁶

Our results indicate that the effect of slavery in 1860 is smaller for counties that were relatively more mechanized in 1940. This result is the same across each of our three outcome measures. Though we cannot infer the controlled direct effect of slavery from the regression coefficients in Table 1, due to post-treatment bias, we can use the sequential g-estimator approach of [Vansteelandt \(2009\)](#) described in [Acharya, Blackwell and Sen \(2013\)](#) to estimate the effect of slavery at various levels of mechanization.⁷ For example, where mechanization is low in 1940 (i.e., below 0.018 tractors per 100,000 acres of land, which is the first quartile of counties according to tractors), a 10 percentage-point increase in proportion slave leads to a 2.62 percentage-point drop in the percent of whites who identify as Democrat today. Where mechanization is high (i.e., above 0.17 tractors per 100,000 acres, which is the fourth quartile), the same change in proportion slave leads to a 0.12 percentage-point *increase* in percent Democrat. Furthermore, the effect of slavery is insignificant at the typical levels for the most mechanized counties in 1940. This comports with our

⁵Briefly, they include 1860 county-level measures of the log of total population, the percent of farms that were smaller than 50 acres, the log of total farm value per capita, the proportion of church seats in the county that are in Methodist churches, the proportion of total population that was mixed-race, and indicators for access to rails and waterways. They also include the proportion of the county voting Democrat in the 1856 election, and flexible controls for latitude and longitude.

⁶According the U.S. Agricultural Census the number of tractors in the South almost quadrupled between 1940 and 1975 ([Haines and ICPSR, 2010](#)).

⁷Obviously, here we use the modified version of the sequential g-estimator that allows for interactions between the treatment and the intermediate variable ([Vansteelandt, 2009](#)).

expectations, as these are exactly the counties that lost their economic imperative for labor coercion, and racism.

Of course, our estimates here should be interpreted with caution. Although we have controlled for tractors in 1925 and 1930 and other covariates to account for confounding differences between counties, it might still be the case that counties that saw differential growth in mechanization in the 1930's are distinct for reasons that may directly affect our outcome measures. Nevertheless, it is reassuring to us that we see the expected correlation between our proxy for the timing of mechanization, and our three measures of political and racial attitudes.

5 Conclusion

We have proposed a theory of how violence shapes attitudes over an extended period of time. We applied this theory to the context of the postbellum U.S. South, and argued that violence may have spread in former slaveholding precincts in some part due to the underlying incentives for white farmers to suppress black wages. We now conclude the paper with a discussion of the model's limitations and strengths, and directions for future research.

First, our paper provides a theory of how violence can spread, but we do not provide an explanation for how it starts. More precisely, for violence to spread in our model, we require a small concentrated mass, λ_0 , of individuals to adopt violence in the first period. We did not give an explanation for why these individuals adopt violence. One possible explanation could be that a small community of individuals occasionally have individual-level incentives to engage in violence, for reasons unmodeled. Another possibility is that sparks of communal violence emerge after major shocks, like the Civil War and the consequent abolition of slavery. This would also explain why [Voigtländer and Voth \(2012\)](#) found that anti-semitic violence rose during the Black Death, and after Germany's defeat in World War I. Our theory does not provide a mechanism for how such shocks can spark violence in small communities (though we consider this to be an interesting and important question for future research). Instead, we focused on providing a theory of how violence spreads once it starts, how and when it might begin to decline, and how it leaves a lasting impact on attitudes. Our model provides new insights into these dynamics.

Second, our model does not deal with how violence towards the target group B shapes the attitudes of group B members, or with situations in which group B may also choose violence against group A . Moreover, it does not deal with situations in which violence shapes attitudes, and attitudes in turn impact the incentives for

future violence, possibly leading to longer-term impacts of historical violence. These are important questions for future extensions that build even richer dynamics into our model of attitudes shaped by violence.

In our model, the act of threatening violence against a particular group creates negative attitudes towards that group because of “cognitive dissonance.” Attitudes shaped by violence in this way may last for some time even after the incentives for violence diminish. More generally, attitudes that are supported by profitable actions may last in our framework because each successive generation is likely to imitate such actions. On the other hand, attitudes supported by actions that yield low payoffs more quickly erode, but may still last for long periods. Indeed, there is a body of empirical evidence within the political science, starting with the work of [Campbell et al. \(1980\)](#) and [Jennings and Niemi \(1968\)](#), which shows that political attitudes are shaped by inter-generational socialization. This lends some motivation for our assumption that the attitudes of successive generations are loosely constrained by the attitudes of previous generations.

After developing our theory, we used it to explain how violence towards blacks in the U.S. South in the decades after Reconstruction might have produced racially hostile attitudes that have lasted to the present. We argued that the incentives for violence in this period might have arisen in some part due to the incentives of the Southern white elite to replace slavery with new forms of labor coercion, such as paternalistic wage contracts, peonage, and convict-leasing. Broadly, our theory is one in which powerful individuals respond to the abrupt and forced abolition of an entrenched social institution like slavery by seeking to establish other local and informal institutions that serve a similar purpose to that of the previous, forcibly abolished, formal institution. This idea is also discussed briefly in [Acemoglu et al. \(2011\)](#), who explain that when Napoleon’s armies forcibly removed seigniorial institutions in Western Germany, local elites tried to set up informal institutions that served the same roles as the ones that were forcibly abolished.

Our model explained the core findings of our previous empirical paper, [Acharya, Blackwell and Sen \(2013\)](#), and generated a new prediction, which we called the “mechanization hypothesis.” Under this prediction, the effects of slavery’s historical prevalence on modern day attitudes should be smaller in Southern counties that mechanized their agriculture quicker. We showed that this prediction has empirical support in the fact that the effects of 1960 slave prevalence on contemporary attitudes tempered by measures of mechanization in 1940. Indeed, this important observation presents a silver lining in our research: although the incentives produced by historical forces and institutions may have lasting effects, these effects are likely to diminish over

time if the original incentives that generated them are changed. This idea is consistent with previous findings such as those of [Alesina and Fuchs-Schundeln \(2007\)](#), who show that East and West Germans continued to hold different beliefs about redistribution and government intervention even 15 years after unification, but that these beliefs have been converging. Under our theory, postbellum violence produced racial hostility among whites beginning in the late 1870s and lasting at least until the start of agricultural mechanization around 1930. It is difficult to assess how long it will take for the effects of this period to dissipate, but if our theory is compelling, then we have good reason to believe that these effects are not permanent.

Appendix

A. Proof of Theorem 1

The proof is by induction. Since the set of individuals that engage in violence in the first period is an interval $[-\frac{\lambda_0}{2}, \frac{\lambda_0}{2}]$ (by Assumption 2) the theorem can be proven by showing that if the set of individuals that engage in violence in period t is an interval $[-\frac{\lambda_t}{2}, \frac{\lambda_t}{2}]$ then the set that engage in violence in period $t + 1$ is $[-\frac{\lambda_{t+1}}{2}, \frac{\lambda_{t+1}}{2}]$, where λ_{t+1} is given by (†). The path of attitudes $a_t(r)$ described in (*) is then a immediate implication of this result.

Note that in periods $t < t^*$, we have $\lambda_t \geq \mu$ along the conjectured path. We focus on values of $r \geq 0$, since the argument for values of $r < 0$ will be symmetric. For every individual located at $r \in [0, \frac{\lambda_t}{2} - \frac{\mu}{2}]$, $\mathcal{A}_t^0(r) = \emptyset$, so $\alpha_{t+1}(r) = 1$. For individuals located at $r > \frac{\lambda_t}{2} + \frac{\mu}{2}$, $\mathcal{A}_t^1(r) = \emptyset$, so $\alpha_{t+1}(r) = 0$. For individuals $r \in (\frac{\lambda_t}{2} - \frac{\mu}{2}, \frac{\lambda_t}{2} + \frac{\mu}{2}]$, we have

$$\sup u_t(\mathcal{A}_t^1(r)) = u_t(\max\{0, r - \frac{\mu}{2}\}) = \begin{cases} \pi_t \left(1 - \frac{r - \lambda_t/2}{\mu}\right) - v & \text{if } r > \lambda_t/2 \\ \pi_t(1) - v & \text{if } r \leq \lambda_t/2 \end{cases} \quad (12)$$

The first equality follows from the fact that $\pi_t(\rho)$ is strictly increasing in ρ (by Assumption 1), so $u_t(\tilde{r})$ is highest for $\tilde{r} = \max\{0, r - \frac{\mu}{2}\}$ in the set $\mathcal{B}(r)$. The second follows from noting that $\rho_t(\max\{0, r - \frac{\mu}{2}\})$ equals 1 for $r \leq \lambda_t/2$, and equals $1 - \frac{r - \lambda_t/2}{\mu}$ for $r > \lambda_t/2$; and then substituting $u_t(r)$ from (1).

On the other hand, for these individuals we also have

$$\begin{aligned} \sup u_t(\mathcal{A}_t^0(r)) &= \lim_{\varepsilon \rightarrow 0^+} \pi_t(\rho_t(\frac{\lambda_t}{2} + \varepsilon)) \\ &= \lim_{\varepsilon \rightarrow 0^+} \pi_t\left(\frac{1}{\mu} \left(\left(\frac{\lambda_t}{2} + \varepsilon\right) - \left(\frac{\lambda_t}{2} - \frac{\mu}{2}\right)\right)\right) = \pi_t\left(\frac{1}{2}\right) \end{aligned} \quad (13)$$

which follows from the continuity of $\pi_t(\cdot)$ (by Assumption 1). Since $v < \pi_t(1) - \pi_t(\frac{1}{2})$ for all periods $t < t^*$, these results imply that $\sup u_t(\mathcal{A}_t^1(r)) \geq \sup u_t(\mathcal{A}_t^0(r))$ for all $r \leq \lambda_t/2$. For $r > \lambda_t/2$ we have $\sup u_t(\mathcal{A}_t^1(r)) \geq \sup u_t(\mathcal{A}_t^0(r))$ if and only if

$$\pi_t \left(1 - \frac{r - \lambda_t/2}{\mu} \right) - v \geq \pi_t \left(\frac{1}{2} \right) \quad (14)$$

At $r = \lambda_t/2$, the left side is bigger than the right side (by Assumption 1), and at $r = (\lambda_t + \mu)/2$ it is smaller (since $v > 0$). Since $\pi_t(\rho)$ is increasing in ρ , there is a critical r_t^* such that the two sides are equal. By definition, we have

$$1 - \frac{r_t^* - \lambda_t/2}{\mu} = \rho_t^* \quad \implies \quad r_t^* = \frac{\lambda_t}{2} + \mu(1 - \rho_t^*) \quad (15)$$

Since we need $r_t^* = \lambda_{t+1}/2$, the result obtains for periods $t < t^*$.

Now consider periods $t \geq t^*$, and suppose that $\lambda_t \geq \mu$. Again, for all $r \in [0, \frac{\lambda_t}{2} - \frac{\mu}{2}]$, $\mathcal{A}_t^0(r) = \emptyset$, so $\alpha_{t+1}(r) = 1$; and for all $r > \frac{\lambda_t}{2} + \frac{\mu}{2}$, $\mathcal{A}_t^1(r) = \emptyset$, so $\alpha_{t+1}(r) = 0$. For all $r \in (\frac{\lambda_t}{2} - \frac{\mu}{2}, \frac{\lambda_t}{2} + \frac{\mu}{2}]$, the expressions for $\sup u_t(\mathcal{A}_t^1(r))$ and $\sup u_t(\mathcal{A}_t^0(r))$ are given by (12) and (13) above, so $v > \pi_t(1) - \pi_t(\frac{1}{2})$ and the fact that $\pi_t(\rho)$ is strictly increasing in ρ (both by Assumption 1) imply that $\sup u_t(\mathcal{A}_t^1(r)) < \sup u_t(\mathcal{A}_t^0(r))$ for all $r \in (\frac{\lambda_t}{2} - \frac{\mu}{2}, \frac{\lambda_t}{2} + \frac{\mu}{2}]$. Thus, the set of farmers who engage in violence in period $t + 1$ is $[-\frac{\lambda_t}{2} + \frac{\mu}{2}, \frac{\lambda_t}{2} - \frac{\mu}{2}]$.

Now suppose $0 < \lambda_t < \mu$. Again, since $\mathcal{A}_t^1(r) = \emptyset$ for all $r > \frac{\lambda_t}{2} + \frac{\mu}{2}$ we know that $\alpha_{t+1}(r) = 0$ for all $r > \frac{\lambda_t}{2} + \frac{\mu}{2}$. On the other hand, for all $r \in [0, \frac{\lambda_t}{2} + \frac{\mu}{2}]$, we have

$$\sup u_t(\mathcal{A}_t^0(r)) = \lim_{\varepsilon \rightarrow 0^+} \pi_t \left(\frac{\lambda_t}{2} + \varepsilon \right) = \begin{cases} \pi_t(1/2) & \text{if } \lambda_t \geq \mu/2 \\ \pi_t(\lambda_t/\mu) & \text{if } \lambda_t < \mu/2 \end{cases} \quad (16)$$

For all $r \geq 0$, $\sup u_t(\mathcal{A}_t^1(r))$ is bounded above by $u_t(0) = \pi_t(\lambda_t/\mu) - v$. So if $\lambda_t < \mu/2$, then for all $r \geq 0$ we have $\alpha_{t+1}(r) = 0$, since $v > 0$ implies $\sup u_t(\mathcal{A}_t^1(r)) < \sup u_t(\mathcal{A}_t^0(r))$ in this case. If, instead, $\lambda_t \geq \mu/2$, then we also have $\sup u_t(\mathcal{A}_t^1(r)) < \sup u_t(\mathcal{A}_t^0(r))$, since

$$\pi_t(1/2) > \pi_t(1) - v > \pi_t(\lambda_t/\mu) - v \quad (17)$$

where the first inequality follows by Assumption 1, and the second follows by our hypothesis that $\lambda_t < \mu$ and the fact that $\pi_t(\rho)$ is strictly increasing in ρ (also by Assumption 1). Consequently, we have $\alpha_{t+1}(r) = 0$ for all $r \geq 0$. Finally, if $\lambda_t = 0$ then $\mathcal{A}_t^1(r) = \emptyset$, so $\alpha_{t+1}(r) = 0$ for all r . \square

B. Proof of Proposition 1

Part (i) follows immediately from Theorem 1, since the mass of individuals who undertake violence, λ_t , is increasing in t until period t^* and then decreasing afterwards until a period \underline{t} after which it is constantly equal to 0.

For part (ii), note that if v is small in comparison to $m_t/\bar{w}Y$ for sufficiently many periods $t \leq t^*$ then $(\frac{1}{2} - \frac{vm_t}{\bar{w}Y})$ is nearly equal to $1/2$ in these periods. Then given that in this application $\rho_t^* = \frac{1}{2} + \frac{vm_t}{\bar{w}Y}$ for all $t < t^*$, this implies that all of these t periods, the mass of farmers engaging in violence grows by an amount less than but nearly equal to μ . In t periods, then, it has grown by an amount less than, but nearly equal to μt . If κ is small, then no farmer r has reached the maximum anti-black attitude $a_t(r) = 1$. This means that if t is large enough, then $\lambda_{t^*} - \mu > \mu$. In period $t^* + 1$ the attitude of a mass μ of farmers declines by κ , but the attitude of a mass $\lambda_{t^*} - \mu$ of them rises by κ (while everyone else's attitude remains 0). So, the net change in average attitude is $(\lambda_{t^*} - \mu)\kappa - \mu\kappa > 0$. Since average attitudes must be strictly decreasing after period \underline{t} when all violence disappears, there must be a period t^{**} between t^* and \underline{t} at which average attitude peaks. Since for every farmer r that has a positive attitude $a_t(r) > 0$, attitudes decrease by κ each period after period \underline{t} , there must be a period $\bar{t} > \underline{t}$ after which all farmer's attitudes are forever 0. \square

C. Proof of Proposition 3

First note that Assumption 5 implies $t_1^* \leq t_2^*$. The same assumption implies that $\rho_{t,1}^* > \rho_{t,2}^*$, since $\rho_{t,j}^* = \frac{1}{2} + \frac{vm_{t,j}}{\bar{w}Y}$ for all $t < t_j^*$. This implies that for all $t < t_1^*$, $\lambda_{t+1,1} < \lambda_{t+1,2}$. Moreover, $\lambda_{t+1,1}$ is decreasing in periods t_1^*, \dots, t_2^* , while $\lambda_{t+1,2}$ is increasing in these periods (so obviously we have $\lambda_{t+1,1} < \lambda_{t+1,2}$ for all $t = t_1^*, \dots, t_2^*$). Next, because $\lambda_{t+1,1} = \max\{\lambda_{t,1} - \mu, 0\}$ while $\lambda_{t+1,2} = \lambda_{t,2} - \mu > 0$ for all $t = t_2^*, \dots, \underline{t}_2 - 1$, we know that $\lambda_{t+1,1} < \lambda_{t+1,2}$ for all $t = t_2^*, \dots, \underline{t}_2 - 1$. For $t \geq \underline{t}_2$, we have $\lambda_{t+1,1} = \lambda_{t+1,2} = 0$.

The argument above establishes that $t_1^* \leq t_2^*$ and $\underline{t}_1 \leq \underline{t}_2$. The argument above also implies that $\bar{t}_2 \geq \bar{t}_1$. Then, note that under Lemma 2, the only attitudes that any farmer holds in period t attitudes in the set $\mathcal{K} = \{0, \kappa, 2\kappa, \dots, 1\}$. Since κ is small, the above argument implies that in all periods $t = 1, \dots, \bar{t}_2$, for every non-zero level of attitude in the set \mathcal{K} , the mass of farmers who hold that level of attitude in county 2 is weakly larger than the mass of farmers who hold that attitude in county 1, and *strictly* larger for at least one non-zero level of attitude. This implies that average attitudes are greater in county 2 than in county 1 for all $t = 1, \dots, \underline{t}_2 - 1$ and equal to 0 in both counties for all $t \geq \underline{t}_2$. \square

References

- Acemoglu, Daron, Davide Cantoni, Simon Johnson and James A Robinson. 2011. “The consequences of radical reform: The French Revolution.” *American Economic Review* 101(7):3286–3307.
- Acharya, Avidit, Matthew Blackwell and Maya Sen. 2013. “The Political Legacy of American Slavery.”
- Akerlof, George A and William T Dickens. 1982. “The economic consequences of cognitive dissonance.” *The American Economic Review* 72(3):307–319.
- Alesina, Alberto and Nicola Fuchs-Schundeln. 2007. “Goodbye Lenin (or Not?): The Effect of Communism on People.” *American Economic Review* 97(4):1507–1528.
- Alesina, Alberto, Paola Giuliano and Nathan Nunn. 2013. “On the origins of gender roles: Women and the plough.” *Quarterly Journal of Economics* 128(2):469–530.
- Alston, Lee J. and Joseph P. Ferrie. 1993. “Paternalism in Agricultural Labor Contracts in the U.S. South: Implications for the Growth of the Welfare State.” *American Economic Review* pp. 852–876.
- Alston, Lee J and Joseph P Ferrie. 1999. *Southern Paternalism and the American Welfare State: Economics, Politics, and Institutions in the South, 1865-1965*. Cambridge University Press.
- Alston, Lee J. and Kyle D. Kauffman. 2001. “Competition and the Compensation of Sharecroppers by Race: A View from Plantations in the Early Twentieth Century.” *Explorations in Economic History* 38(1):181–194.
- Bardhan, Pranab and Christopher Udry. 1999. *Development microeconomics*. Oxford University Press.
- Blackmon, Douglas A. 2008. *Slavery by Another Name: The Re-Enslavement of Black Americans from the Civil War to World War II*. Anchor Books.
- Bowles, Samuel. 2006. *Microeconomics: behavior, institutions, and evolution*. Princeton University Press.
- Bowles, Samuel and Herbert Gintis. 2005. “Evolutionary Origins of Collective Action.” *Oxford Handbook of Political Economy* .
- Boyd, Robert and Peter J Richerson. 1988. *Culture and the Evolutionary Process*. University of Chicago Press.

- Boyd, Robert and Peter J. Richerson. 2002. "Group beneficial norms can spread rapidly in a structured population." *Journal of Theoretical Biology* 215(3):287–296.
- Boyd, Robert and Peter J. Richerson. 2005. *The Origin and Evolution of Culture*. Oxford University Press.
- Campbell, Angus, Philip E. Converse, Warren E. Miller and Donald E. Stokes. 1980. *The American Voter*. University of Chicago Press.
- Day, Richard H. 1967. "The Economics of Technological Change and the Demise of the Sharecropper." *The American Economic Review* 57(3):427–449.
- Eshel, Ilan, Larry Samuelson and Avner Shaked. 1998. "Altruists, egoists, and hooligans in a local interaction model." *American Economic Review* pp. 157–179.
- Festinger, Leon. 1962. *A theory of cognitive dissonance*. Vol. 2 Stanford university press.
- Haines, Michael R and ICPSR. 2010. "Historical, Demographic, Economic, and Social Data: The United States, 1790-2002." Inter-university Consortium for Political and Social Research (ICPSR) [distributor].
- Higgs, Robert. 1977. *Competition and Coercion: Blacks in the American Economy, 1865-1914*. Vol. 163 Cambridge; New York: Cambridge University Press.
- Hornbeck, Richard and Suresh Naidu. 2013. When the Levee Breaks: Black Migration and Economic Development in the American South. Technical report National Bureau of Economic Research.
- Jennings, M. Kent and Richard G. Niemi. 1968. "The Transmission of Political Values from Parent to Child." *The American Political Science Review* 62(1):169–184.
- Jha, Saumitra. 2013. "Trade, Institutions, and Religious Tolerance: Evidence from India." *Forthcoming, American Political Science Review* p. to appear.
- Kinder, Donald R. and David O. Sears. 1981. "Prejudice and Politics: Symbolic Racism Versus Racial Threats to the Good Life." *Journal of Personality and Social Psychology* 40(3):414–31.
- Klinkner, Philip A. and Rogers M. Smith. 2002. *The Unsteady March: The Rise and Decline of Racial Equality in America*. University of Chicago Press.
- Kousser, Morgan J. 1974. *The Shaping of Southern Politics: Suffrage Restriction and the Establishment of the One-Party South, 1880-1910*. Yale University Press.

- Lichtenstein, Alex. 1996. *Twice the Work of Free Labor: The political Economy of Convict Labor in the New South*. Verso Books.
- Logan, Rayford W. 1954. *The Negro in American Life and Thought*. Dial Press.
- Naidu, Suresh. 2010. "Recruitment Restrictions and Labor Markets: Evidence from the Postbellum U.S. South." *Journal of Labor Economics* 28(2):413–435.
- Naidu, Suresh. 2012. Suffrage, Schooling, and Sorting in the Post-bellum U.S. South. Technical report National Bureau of Economic Research.
- Nunn, Nathan. 2007. "Historical legacies: A model linking Africa's past to its current underdevelopment." *Journal of Development Economics* 83(1):157–175.
- Nunn, Nathan. 2009. "The Importance of History for Economic Development." *Annual Review of Economics* 1(1):65–92.
- Nunn, Nathan and Leonard Wantchekon. 2011. "The Slave Trade and the Origins of Mistrust in Africa." *American Economic Review* 101(7):3221–3252.
- O'Connell, Heather A. 2012. "The Impact of Slavery on Racial Inequality in Poverty in the Contemporary U.S. South." *Social Forces* 90(3):713–734.
- Rabin, Matthew. 1994. "Cognitive dissonance and social change." *Journal of Economic Behavior & Organization* 23(2):177–194.
- Rabin, Matthew. 1998. "Psychology and economics." *Journal of economic literature* 36(1):11–46.
- Shapiro, Herbert. 1988. *White Violence and Black Response: From Reconstruction to Montgomery*. University of Massachusetts Press.
- Simon, Herbert A. 1957. "Models of man; social and rational."
- Street, James Harry. 1972. *The New Revolution in the Cotton Economy: Mechanization and its Consequences*. Johnson Reprint Corporation.
- Tabellini, Guido. 2008. "The scope of cooperation: Values and incentives." *The Quarterly Journal of Economics* 123(3):905–950.
- Vansteelandt, Sijn. 2009. "Estimating Direct Effects in Cohort and Case-Control Studies." *Epidemiology* 20(6):851–860.
- Voigtländer, Nico and Hans-Joachim Voth. 2012. "Persecution Perpetuated: The Medieval Origins of Anti-Semitic Violence in Nazi Germany*." *The Quarterly Journal of Economics* 127(3):1339–1392.

- Woodman, Harold D. 1977. "Sequel to Slavery: The New History Views the Postbellum South." *The Journal of Southern History* 43(4):523–554.
- Woodman, Harold D. 1979. "Post-Civil War Southern Agriculture and the Law." *Agricultural History* 53(1):319–337.
- Woodman, Harold D. 1995. *New South, New Law: The Legal Foundations of Credit and Labor Relations in the Postbellum Agricultural South*. Louisiana State University Press.
- Wright, Gavin. 1986. *Old South, New South: Revolutions in the Southern Economy Since the Civil War*. Vol. 2 Basic Books New York.
- Zaller, John. 1992. *The Nature and Origins of Mass Opinion*. Cambridge University Press.

The Political Legacy of American Slavery*

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Abstract

We show that contemporary differences in political attitudes across counties in the American South trace their origins back to the influence of slavery's prevalence more than 150 years ago. Whites who currently live in Southern counties that had high shares of slaves population in 1860 are less likely to identify as Democrat, more likely to oppose affirmative action policies, and more likely to express racial resentment toward blacks. These results are robust to accounting for a variety of attributes, including contemporary shares of black population, urban-rural differences, and Civil War destruction. Moreover, the results strengthen when we instrument for the prevalence of slavery using measures of the agricultural suitability to grow cotton. To explain our results, we offer a theory in which political and racial attitudes were shaped historically by the incentives of Southern whites to propagate racist institutions and norms in areas like the "Black Belt" that had high shares of recently emancipated slaves in the decades after 1865. We argue that these attitudes have, to some degree, been passed down locally from one generation to the next.

Key words: slavery, institutions, norms, historical persistence, political behavior, party identification

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1 Introduction

For the first 250 years of American history, white landowners, predominantly from the South, enslaved more than four million individuals of African descent. This “peculiar institution,” as it was sometimes called, defined the social, economic, and political landscape of the American South, from the founding of the Republic through much of the 19th century. Slavery was so crucial to the South that one Georgia newspaper editor wrote, “negro slavery is the South, and the South is negro slavery” (cited in [Faust, 1988](#)). Yet despite slavery’s prominence in shaping American history, and despite the volumes written by historians, sociologists, and economists on its consequences, political scientists have largely overlooked how slavery might continue to affect contemporary political attitudes. Given findings from economics on the long-term consequences of other similarly coercive institutions ([Dell, 2010](#); [Nunn and Wantchekon, 2011](#); [Acemoglu, García-Jimeno and Robinson, 2012](#)), it would be surprising if such a fundamental aspect of American history had no persistent impact on politics.

In this paper, we estimate the effect of the local prevalence of slavery—an institution that was abolished nearly 150 years ago—on present-day attitudes in the American South. Drawing on a sample of more than 39,000 Southern whites, we show that whites who currently live in counties that had high concentrations of slaves in 1860 are on average more conservative and express colder feelings towards African Americans than whites who live elsewhere in the South. That is, the larger the number of slaves in his or her county of residence in 1860, the greater the probability that a white Southerner today will identify as a Republican, express opposition to affirmative action, and express colder feelings towards African Americans. We show that these differences are robust to a variety of factors, including geography and mid-19th century economic conditions and political attitudes. We also show that our results strengthen when we instrument for the prevalence of slavery using local measures of the agricultural suitability to grow cotton. Furthermore, our findings indicate that areas of the South that had very few slaves in 1860 are politically indistinguishable from similar Northern areas on these outcomes. Thus, the local prevalence of slavery helps explain both the exceptional and diverse nature of attitudes in the contemporary South.

Our results are remarkably robust and cannot be explained by several existing theories of American political behavior. For example, given the high correlation between slavery in 1860 and contemporary shares of black population, we consider the possibility that our results simply reflect the fact that white racial attitudes vary with

contemporary proportions of black population—the central finding of the literature on racial threat (Key, 1949; Blalock, 1967; Blumer, 1958). However, we estimate the direct effect of slavery on contemporary political attitudes and find that contemporary shares of black population explain very little of slavery’s effects. Moreover, the contemporary share of black population actually predicts *warmer* attitudes towards blacks once we account for slavery in 1860. In addition, we consider the possibility that the effects of slavery are driven by the fact that slavery was more prevalent in rural areas, which tend to be more conservative than urban areas. However, we show that our results are robust to dropping the top quartile of highest population counties. Finally, we also test various other explanations for our results, including the possibility that slavery’s effects are driven exclusively by pre-Civil War racism or post-Civil War population shifts. Though we cannot fully rule out these possibilities, we provide evidence against their ability to completely explain our results.

If slavery has persistent effects that are not driven by these factors, then what explains our findings? We argue that emancipation was a cataclysmic event that undermined Southern whites’ political and economic power. Indeed, as suggested by Key (1949), the sudden enfranchisement of blacks after the Civil War was politically threatening to whites, who for centuries had enjoyed exclusive political power. In addition, the sudden emancipation of blacks substantially undermined whites’ economic power by producing an abrupt increase in black wages, threatening the viability of the plantation economy (Higgs, 1977; Alston and Ferrie, 1993). Taken together, these political and economic changes gave the Southern white elite an incentive to promote local anti-black sentiment by encouraging violence towards blacks, racist norms and cultural beliefs, and, to the extent legally possible, the institutionalization of racist policies such as Jim Crow laws. These incentives were obviously more pronounced in areas, such as the “Black Belt,” that had large proportions of newly freed slaves. This motivates our hypothesis that the prevalence of slavery in the years just before it was abolished is a predictor of whites’ attitudes towards blacks, and their political attitudes more generally.

But why would the racially hostile attitudes that were produced in the years following emancipation persist for so long? We argue that each successive generation has, to some degree, inherited the attitudes and beliefs of the previous generation—an argument that is consistent with previous empirical findings showing that children frequently inherit the political attitudes of their parents (Campbell et al., 1980; Jennings and Niemi, 1968, 1981). We provide affirmative empirical support for this argument

by showing that areas of the South that were the earliest to eliminate the political and economic incentives for anti-black attitudes (for example, by moving away from labor-intensive crops or by being early adaptors of labor-saving farm technologies) are also those areas in which slavery’s long term effects have most attenuated.

This paper proceeds as follows. In Section 2, we motivate our hypothesis that the prevalence of slavery is linked to more racially hostile political attitudes today, through the channels that we suggest. We discuss our data in Section 3, and present our core results linking the prevalence of slavery and contemporary attitudes in Section 4. In Section 5, we consider, and then provide evidence against, five alternate theories that could explain our findings. In Section 6, we provide evidence in favor of our explanation that post-Civil War political and economic conditions incentivized white elites to encourage racial violence and racist attitudes. Section 7 concludes by discussing the broader implications of our research for scholarship in American political behavior.

2 How Slavery May Affect Attitudes Today

We orient our analysis toward the Southern “Black Belt” (or the “Cotton Belt”), the hook-shaped swath from the Mississippi Delta through southern Georgia that was the locus of antebellum chattel slavery (Figure 1). Scholars have noted that the whites of the Black Belt are particularly prominent in Southern politics and are more conservative than whites elsewhere in the South. As Key wrote in his seminal book *Southern Politics in State and Nation* (1949), “the whites of the black belts who have the deepest and most immediate concern about the maintenance of white supremacy,” and “if the politics of the South revolves around any single theme, it is that of the role of the black belts.” Furthermore, these areas of the South had an enormous influence on national politics. Members of Congress from these regions held key Congressional positions and effectively possessed veto power during the development of the welfare state in the 1920s and 30s (Katznelson, Geiger and Kryder, 1993). Thus, the political exceptionalism of the Black Belt is hardly a small issue; to the contrary, it has shaped the landscape of American politics.

2.1 Historical Explanations

Our core hypothesis is that the more conservative nature of the Black Belt is in part a direct consequence of the historical prevalence of slavery in this area. We are moti-

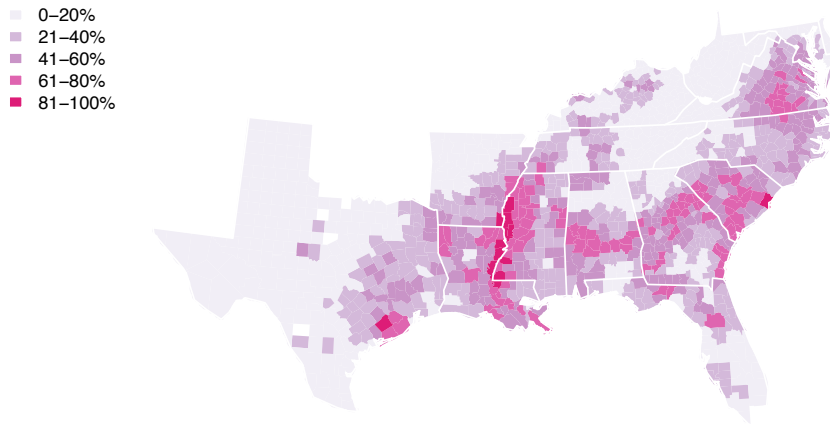


Figure 1: Estimated Proportion Slave, 1860. High concentrations are seen along the Mississippi River, and the “Black Belt” (or “Cotton Belt”)—the hook shaped area of land from northern Mississippi through Alabama, Georgia and South Carolina.

vated by an emerging empirical literature showing that the historical legacy of slavery can be felt today in other contexts. For example, [Dell \(2010\)](#) shows that a colonial-era forced labor system in Peru and Bolivia has led to lower levels of modern-day household consumption and childhood growth. [Acemoglu, García-Jimeno and Robinson \(2012\)](#) find that the historical presence of slavery in colonial gold mines in Colombia is associated with modern-day increased poverty, reduced school enrollment, and decreased vaccination rates. Looking at Africa, [Nunn and Wantchekon \(2011\)](#) show that Africans whose ancestors were targeted by the slave trade have higher levels of mistrust today than other Africans. Within the United States, [O’Connell \(2012\)](#) demonstrates that areas of the American South that had high numbers of slaves have significantly higher levels of economic inequality between blacks and whites today, a conclusion echoed by [Nunn \(2008\)](#) and [Lagerlöf \(2005\)](#), who find a negative relationship between the prevalence of slavery and income, and [Mitchener and McLean \(2003\)](#), who find a negative relationship between slavery and subsequent labor productivity. Thus, a growing literature shows that historical institutions such as slavery can affect behavior and beliefs long after they disappear ([Nunn, 2009](#)).

How would pre-Civil War slavery directly affect attitudes today? We hypothesize that the abolition slavery in 1865 was a cataclysmic event that undermined Southern

whites’ political and economic power (Du Bois, [1935] 1999). Previously, the Southern white elite could rely on state-level institutions promoting slavery to safeguard their economic and political positions in society. As soon as these formal institutions were abolished, the Southern white elite had an abrupt incentive to promote informal institutions and cultural norms that could replace the previous formal institutions. Such an incentive would generate differences in political attitudes across large and small slave-holding areas if it was either the case that the Southern white elite were able to create anti-black sentiments where they previously did not exist, or if they were able to keep ante-bellum racism from declining as quickly it would have otherwise. Indeed, the Southern white elite promoted anti-black sentiments by encouraging local violence towards blacks, racist norms and cultural beliefs, and, to the extent legally possible, racist institutions as well. These racially hostile norms were subsequently passed down through generations, resulting in contemporary anti-black attitudes that can still be felt today. Our theory is consistent with the literature in political science that argues that elites have considerable influence in shaping mass opinion (e.g., Zaller, 1992), as well as the literature that finds compelling evidence for the intergenerational transfer of mass public opinion (e.g., Campbell et al., 1980; Jennings and Niemi, 1968, 1981). We develop and test our theory more fully in Section 6.

2.2 Other Explanations

The link between slavery and current-day attitudes may operate (if at all) through other mechanisms besides the ones we describe above. As Key suggested, one possibility is that the historical prevalence of slavery has led to persistently large concentrations of African Americans still living in certain parts of the South like the Black Belt. Locally high concentrations of African Americans today in turn threaten whites’ dominance *today*, which results in whites contemporaneously adopting more conservative racial attitudes. The literature supporting this idea of such “racial threat” is voluminous.¹ For example, Glaser (1994) finds evidence linking high concentra-

¹The early literature developing this idea dates back to Key. Although we cannot cite it all, we do note some prominent early studies showing, for example, that modern-day concentrations of blacks predicted white support for segregationist candidates such as George Wallace (Key, 1984; Wright Jr, 1977; Knoke and Kyriazis, 1977; Black and Black, 1973; Wrinkle and Polinard, 1973; Schoenberger and Segal, 1971; Rogin, 1969; Birdsall, 1969; Heard, 1952). Other early studies also found correlations between high concentrations of African Americans and racially hostile white attitudes (Giles, 1977; Blalock, 1967; Pettigrew, 1957), negative attitudes on school desegregation (Pettigrew, 1957; Ogburn and Grigg, 1956), resistance against black voter registration (Matthews and Prothro, 1966), and higher incidences of lynching (Reed, 1972).

tions of blacks and negative white attitudes toward civil rights or African American politicians. [Giles and Buckner \(1993\)](#) and [Giles and Buckner \(1996\)](#) find a strong relationship between black concentrations and whites' support for racially conservative candidates such as David Duke. (These findings have, however, been challenged by [Voss \(1996\)](#).) Other research has linked local concentrations of African Americans to other kinds of political beliefs (for example racially charged state referenda, e.g., [Orey et al., 2011](#)) and also to income-based voting ([Hersh and Nall, 2013](#)). However, none of this literature makes the quantitative link between modern-day concentrations of African Americans and slavery; likewise, none of it has considered the possibility that the historical prevalence of slavery could be an independent predictor of modern-day attitudes. Nonetheless, we consider a key alternate explanation for our findings to be that slavery's effects operate primarily through high black concentrations. In other words, the historical prevalence of slavery in certain parts of the South has led to high modern-day concentrations of African Americans in those parts, and the latter is what influences whites' contemporary beliefs.

We also consider several other possible hypotheses. For example, a substantial literature addresses the fact that whites' attitudes are driven by education, income, urban-rural differences, and other contextual factors, and not simply the threat posed by high concentrations of members of a minority group (e.g., [Oliver and Mendelberg, 2000](#); [Baybeck, 2006](#); [Hopkins, 2010](#)). As an example, Key himself noted that different areas of the South varied in meaningful ways other than black concentration; for example, North Carolina had greater urbanization than otherwise comparable Black Belt areas in Alabama ([Key, 1949](#), pg. 217). For purposes of understanding slavery's effect, we therefore consider the possibility that the link between slavery and contemporary white attitudes could, in fact, be driven by characteristics varying with slaveholding counties. Specifically, we consider an alternative hypothesis to be that former slaveholding areas are systematically more rural (and hence more conservative) or that they were more likely to have incurred greater costs associated with the Civil War (and hence perhaps more anti-government). We also consider that geographic mobility might be explaining our results. For example, it could be the case that more racially conservative people have migrated into former slaveholding areas (and, vice versa, that racially tolerant people have left). Lastly, we also consider the possibility that former slaveholding areas varied according to pre-Civil War wealth, geography, and social and political beliefs, and that these—not slavery—are what affects modern-day white attitudes. Indeed, in an influential book, [Jordan \(1968\)](#)

argues that the origins of racial attitudes actually predate 1860 and may even go as far back to the start of the African slave trade.

Ultimately, we note that much of the quantitative political science literature on interracial attitudes focuses on contemporary or individual-level factors in explaining political beliefs, rather than on historical forces. Such a contemporary focus overlooks the importance of history in shaping modern-day outcomes (e.g., [O’Connell, 2012](#); [Dell, 2010](#); [Nunn and Wantchekon, 2011](#); [Nunn, 2008](#)). Key himself was aware of the importance of history in the context of slavery when he noted that, in the years leading to the Civil War, “those with most at stake—the owners of large numbers of slaves—were to be found roughly in the same areas as present-day black belts” ([Key, 1949](#)). We now turn to exploring this historical link.

3 Data

Our main explanatory variable, and proxy for the prevalence of slavery, is the proportion of each county’s 1860 population that was enslaved, as measured by the 1860 U.S. Census. Although slave counts were taken before 1860, we use measures from the 1860 Census because they represent the last moment that the number of slaves was recorded before chattel slavery was formally abolished in 1865. Overall, we have in our data approximately 4 million African American slaves, constituting 12% of the U.S. population at the time and 32% of the Southern population. Since county boundaries have shifted significantly since 1860, we rely on the work of [O’Connell \(2012\)](#), who has mapped the 1860 Census boundaries onto modern-day boundaries and provides us with measures of slave proportion by modern county. A graphical representation of these data is depicted in [Figure 1](#), which illustrates the prevalence of slavery from the Mississippi Delta to Memphis and through the Black Belt.²

We analyze three county-level outcome measures, all of which come from the Cooperative Congressional Election Study (CCES), a large representative survey of American adults ([Ansolabehere, 2010](#)). We use data from CCES surveys in 2006, 2008, 2009, 2010, and 2011 to create a combined data set of over 157,000 respondents. (Pooling these datasets is necessary to achieve adequate geographic coverage in the

²This measure of local slave institutions treats slavery as a homogeneous institution when, in fact, it was hardly so. Slaves in the Black Belt, for instance, mostly worked on cotton farms, while coastal plantations focused on tobacco and other crops. We might expect these differences to impact the political and economic incentives of Southern whites, but these differences are beyond the scope of this paper.

South.) We subset these data to the South,³ and then to self-identified whites, leaving us with more than 39,000 respondents across 1,251 of the 1,344 Southern counties.⁴ Our three outcome measures of interest are as follows.

Partisanship. Our first outcome measure is the proportion of surveyed whites in each county who identified as Democrats. Such partisan identification could reflect not only explicit racial attitudes (including attitudes toward Barack Obama, for the later CCES surveys), but may also reflect race-related beliefs on a variety of policy issues, including redistribution, education, crime, etc. We construct this partisanship measure from answers to a general seven-point party identification question on the CCES that asks the respondent whether he or she identifies as a “Strong Democrat,” “Not very strong Democrat,” “Lean Democrat,” and then the same on the Republican side (and also including a separate category for “Independents”).⁵ We operationalize the party variable as whether an individual identified at all with the Democratic party (1 if Democrat; 0 if not).

Support for affirmative action. The second outcome measure that we examine is the proportion of whites who say that they support affirmative action, a policy seen by many as helping minorities, possibly at the expense of deserving whites. All of the CCES surveys ask respondents whether they support or oppose affirmative action policies, which are described as “programs [that] give preference to racial minorities and to women in employment and college admissions in order to correct for discrimination” (2008 CCES). Although the question wording differs from year to year, we have little reason to believe that these slight variations in wording meaningfully affect our analysis. We construct the outcome variable by using the four-point scale, from “strongly support” affirmative action to “strongly oppose” affirmative action.

³This includes Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

⁴Other public opinion surveys, such as the American National Election Studies, are not large enough to provide the geographic coverage necessary to make county-level inferences.

⁵We use survey data as opposed to voter registration data because primaries in many Southern states are open, meaning that Democrats can vote in Republican primaries and vice versa. Because partisanship in the South has changed dramatically over the last 40 years, with white partisanship moving from strongly Democrat to strongly Republican, voter registration data are unreliable measures of current partisan leanings (see, e.g., [Hersh and Nall, 2013](#)). In addition, only Louisiana, Florida, and North Carolina collect data on both party registration and race for all voters. Finally, an additional benefit of using survey data as opposed to official vote share data is that it enables us to avoid the ecological inference problems associated with disaggregating white from black votes ([King, 1997](#)). In recent elections, Obama won the Black Belt vote handily.

The final variable is operationalized as an indicator representing whether or not the respondent demonstrated any level of support for affirmative action programs (1 for support; 0 if not).

Racial resentment. Our third outcome variable is the proportion of whites who express “racial resentment” (or symbolic racism). As defined by [Kinder and Sears \(1981\)](#), racial resentment is an attitude that “represents a form of resistance to change in the racial status quo based on moral feelings that blacks violate such traditional American values as individualism and self-reliance, the work ethic, obedience, and discipline.” As [Kinder and Winter \(2001\)](#) write, these kinds of attitudes “distinguish those whites who are generally sympathetic towards blacks from those who resent the failure of blacks, as they see it, to demonstrate the virtues of self-reliance and hard work.” [Kinder and Sanders \(1996\)](#), among others, have shown that racial resentment measures are predictive of whites’ attitudes on a variety of race-related issues, including crime, education, busing, and welfare. We use a measure of racial resentment using a CCES question directly related to slavery. The question, only appearing in the 2010 survey, asks respondents, also on a five-point scale, whether they agree that “Generations of slavery and discrimination have created conditions that make it difficult for Blacks to work their way out of the lower class.” We use the reverse of this five-point response scale as our measure of racial resentment, so that stronger disagreement with this statement indicates more racial resentment. Using other measures of racial resentment yields similar results.

4 Slavery’s Effects on Contemporary Outcomes

We begin by showing the bivariate relationships between proportion slave in 1860 and our outcome measures in [Figure 2](#). Here it is clear that there is a negative relationship between local slavery and proportion Democrat and support for affirmative action, whereas there is a positive relationship between proportion slave and racial resentment. We augment this bivariate analysis with baseline estimates of these relationships conditional on various controls (see [Table 1](#)). All regressions here are weighted least squares (WLS) with the within-county sample size as weights, unless otherwise indicated. We analyze these data at the county level because our key explanatory variable (proportion slave in 1860) is measured at the county level; however, running models at the respondent level with standard errors clustered at the county level and additional respondent-level controls leads to the same conclusions

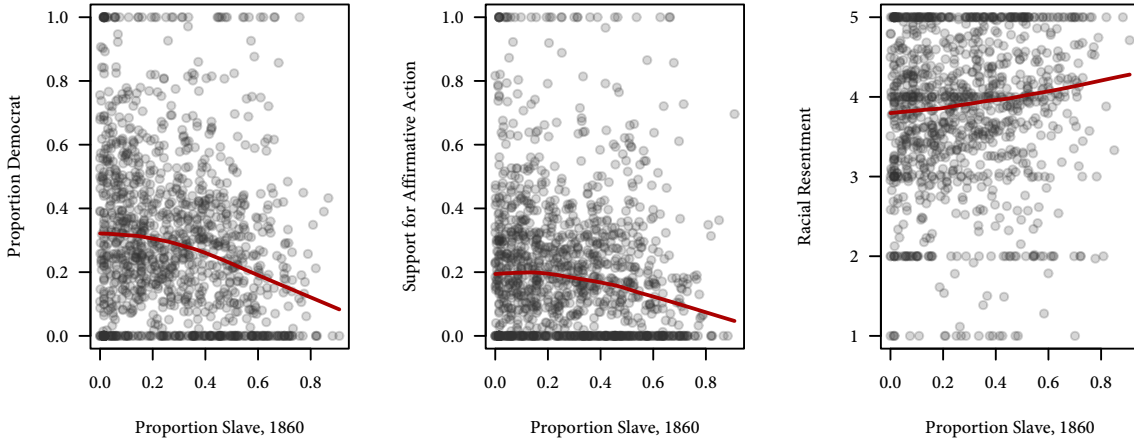


Figure 2: Relationship between proportion slave in 1860 and the outcome measures. Red line is a loess smooth.

(see Appendix A). We use WLS as opposed to ordinary least squares (OLS) because OLS assumes constant variance across counties, an assumption violated by the fact that CCES sample sizes vary considerably across bigger and smaller counties.

In all but our first model, we include state-level fixed effects to address the possibility that states adopted different policies that could have influenced slave shares in 1860 or could affect our outcome variables in ways unrelated to slavery. In addition, we control for factors that may have been predictive of the proportion of slaves in 1860. These “1860 Covariates,” unless otherwise noted, come from the 1860 U.S. Census, and address a variety of possible differences between slaveholding and non-slaveholding counties.⁶ First, because wealthier counties could have had greater or fewer slaves, we control for a number of economic indicators from 1860. These include (1) the log of the total county population, (2) the percent of farms in the county that were smaller than 50 acres, and (3) the log of total farm value per capita in the county. Second, because different counties might have had different norms about slavery, depending on religion and the nature of social interactions between blacks and whites, we include controls for (4) the proportion of church seats in the county that are in Methodist churches,⁷ and (5) the proportion of total population in 1860 that

⁶For the sake of maintaining focus on our key explanatory variable, proportion slave in 1860, we include these control covariates under the label “1860s Covariates.” Regressions with these terms included separately are available from the authors.

⁷Though Southern Methodists were fairly accommodating toward slave holders around the time of the Civil War, earlier Methodists tended to oppose slavery and Northern Methodists were ardent

	Prop. Democrat		Affirm. Action	Racial Resent.
	(1)	(2)	(3)	(4)
Prop. Slave, 1860	-0.183** (0.024)	-0.120** (0.043)	-0.106** (0.037)	0.470* (0.189)
State Fixed Effects		✓	✓	✓
1860 Covariates		✓	✓	✓
N	1,240	769	769	664
R ²	0.046	0.193	0.127	0.117

*p < .05; **p < .01

Table 1: Effects of slavery on white’s partisan identification, support for affirmative action, and racial resentment. All models are weighted least squares, with the within-county sample size as the weights. Standard errors in parentheses.

is mixed-race. We also include an additional control that serves as a useful proxy for pro-slavery sentiment just before 1860; this is (6) the proportion of the county voting Democrat in the 1856 election.⁸ We also control for geographic characteristics that would facilitate trade and commerce. These include (7) an indicator for whether the county had access to rails, and (8) an indicator for whether the county had access to waterways. Finally, to account for any remaining systematic spatial variation, we include controls for (9) the logarithm of the county acreage and (10) the latitude and longitude of the county, as well as their squared terms.

For the sake of transparency, column (1) of Table 1 presents the simple WLS relationship between slavery and white partisan identification, showing that this relationship is meaningful and significant. Columns (2) - (4) further include state-level fixed effects as well as the 1860 covariates described above. The conditional effects of slavery are significant for all of the three outcome variables. To illustrate, a 20 percentage-point increase in the slave proportion of a county (roughly a one standard-deviation change) is associated with a 3 percentage-point decrease in the number of whites in the county who currently identify as Democrats, a 2.4 percentage-point decrease in the number of whites who currently support affirmative action policies,⁹

abolitionists (Posey, 1931). Therefore, we control for the proportion of Methodist church seats to account for the possibility that these religious efforts had some hand in reducing slave counts.

⁸Here, we consider John Fremont, the Republican candidate, to be the anti-slavery candidate. Support for Democrat James Buchanan therefore serves as a proxy for pro-slavery sentiment. Know-Nothing candidate Millard Fillmore received very little support. We also note that replacing the 1856 election results with results from other antebellum elections does not change the results; these analyses, not shown, are available from the authors.

⁹This particular finding is also robust to including answers to the racial resentment questions as controls, as is often done in the symbolic racism/racial resentment literature.

	Prop Slave	Prop Democrat	Affirm. Action	Racial Resentment
	(1)	(2)	(3)	(4)
FAO Cotton Suitability	0.385** (0.027)			
Prop. Slave, 1860		-0.169* (0.074)	-0.144* (0.062)	0.378 (0.349)
State Fixed Effects	✓	✓	✓	✓
Latitude & Longitude	✓	✓	✓	✓
N	1,232	1,232	1,232	1,042
R ²	0.459	0.181	0.078	0.050
Model	2SLS 1st Stage	2SLS 2nd Stage	2SLS 2nd Stage	2SLS 2nd Stage

*p < .05; **p < .01

Table 2: Instrumental variables (IV) estimates of the effect of slavery on white partisan identification, views on affirmative action, and racial resentment, using suitability for growing cotton as the instrument. Column (1) reports the first stage relationship, while columns (2)-(4) report second stage estimates for each of the three outcome measures.

and a 0.094 point increase on the racial resentment question, which represents 0.1 standard deviations. We note also that, in individual respondent-level analyses (included in Appendix Table A.1), these effects are robust to the inclusion of various respondent-level attributes thought to be predictive of individual attitudes, including age, gender, income, and education level. For affirmative action, these results are even robust to the inclusion of the respondent’s party identification. While these results may be contaminated by post-treatment bias, it is reassuring that they agree with the county-level analyses. Taken together, these results are clear: slave prevalence in 1860 has an effect on the political attitudes of Southern whites today.

In the remainder of this section, we examine the robustness of the results above.

4.1 Instrumental Variables Results

There are two potential concerns with the above analysis. First, the 1860 slave data are historical data and may be measured with error. Second, it is possible that we have inadequately controlled for the full set of pre-treatment covariates that simultaneously affect slave proportion in 1860 and political attitudes today, which would result in omitted variable bias. As a robustness exercise, we therefore instrument slave proportion in 1860 with county-level aggregated measures of the environmental suitability for growing cotton, which we constructed using data from the Food and

	Prop. Democrat		Affirm. Action		Racial Resentment	
	(1)	(2)	(3)	(4)	(5)	(6)
	South	North	South	North	South	North
FAO Cotton Suitability	-0.067* (0.028)	-0.011 (0.017)	-0.055* (0.024)	0.020 (0.014)	0.142 (0.128)	-0.003 (0.069)
State Fixed Effects	✓	✓	✓	✓	✓	✓
1860 Covariates	✓	✓	✓	✓	✓	✓
N	1,233	1,489	1,233	1,489	1,043	1,274
R ²	0.196	0.149	0.084	0.119	0.056	0.106

*p < .05; **p < .01

Table 3: Reduced form relationships between cotton suitability and each of the three outcome measures in the South (columns (1), (3), and (5)) and in the North (columns (2), (4), and (6)).

Agriculture Organization (FAO).¹⁰ These measures represent the maximum potential yield of cotton based on soil quality, climate, and ideal growing conditions over the course of the year.¹¹

Table 2 presents our instrumental variable (IV) estimates of the effects of proportions slave on each of the three outcome measures using a two-stage least squares (2SLS) model with state-fixed effects, latitude and longitude, and their squared terms included as controls in both stages. Column (1) of the table presents the strong first-stage relationship between cotton suitability and proportion slave. Columns (2) - (4) present the second stage estimates of the effect of proportion slave on each of the three outcome measures. The results show almost identical second-stage estimates to our baseline estimates of the effect of slave prevalence on contemporary political attitudes, reported in Table 1. The main difference is the slightly lower estimated effect of slavery on racial resentment that fails to achieve statistical significance.¹² In spite of this, the IV approach and the selection-on-the-observables approach of Table 1 above give strikingly similar results.

For our instrumental variables (IV) approach to serve as a plausible identification

¹⁰These data are available at <http://gaez.fao.org>.

¹¹These estimates are based on climate averages from 1961 to 1990 and a “high” level of inputs, which refers to the amount of effort required to extract the resource. Choosing a “high” level of inputs, as opposed to low or intermediate levels, provides us with the strongest first-stage relationship with proportion slave in 1860.

¹²The differences between these results and the baseline results may be due to the lower power of the instrumental variable approach, unmeasured confounding in the baseline specification, or differences between the populations of interest in regression and IV approaches. In regression, we target the entire populations, but, in general, IV approaches only identifies the effect for *compliers*—those counties that developed slavery when cotton suitability was high and avoided slavery when that suitability was low.

strategy, cotton suitability must have an effect on contemporary attitudes exclusively through slavery, an assumption that we recognize may not be satisfied. For example, suitability for growing cotton could determine how rural a county is today, which in turn could directly affect political beliefs. While the exclusion restriction is an untestable assumption, we can assess its plausibility via a falsification test, described as follows. We first estimate the reduced-form relationship between cotton suitability and contemporary beliefs both within and outside of the South (that is, in the North). If there is no relationship between cotton suitability and political attitudes in the North, then we have compelling evidence that any relationship between cotton suitability and political attitudes in the South operates via the prevalence of slavery, since conditional on all of our controls, the key difference between the South and the North, in relation to cotton, is that slaves were brought primarily to support the cotton economy of the South, but not in the North.¹³

We present the results of this falsification test in Table 3. Columns (1), (3) and (5) present the reduced form relationship between cotton suitability and each of our three outcome measures in the South, showing that the estimated effects are significant. On the other hand, columns (2), (4) and (6) show that there is indeed no relationship between cotton suitability and political attitudes in the North: the effects are both small in size and statistically insignificant. Thus, it appears as though our IV estimates are indeed capturing a causal effect.

4.2 Matching Adjacent Counties

Although both our baseline models and IV models control for a number of historical and geographic covariates (such as latitude and longitude, as well as state-level fixed effects) it remains possible that our results are driven by historical and/or geographic differences between slaveholding and non-slaveholding areas that are not fully captured by these covariates. For instance, it could be that the “upland” regions of northern Alabama and Georgia differed systematically from the slave-heavy Black Belt, either in terms of geography or culture (or both) and that this difference is what drives our results (as suggested by Kousser, 2010). To test the robustness of our results to these potential confounders, we restrict our sample to the set of neighboring counties that are on either side of a cutoff of 50% slave in 1860 (shown in Figure A.1 of Appendix B). This enables us to compare the effects of slavery across

¹³Our falsification test is motivated by Nunn and Wantchekon (2011), who use a similar comparison of reduced-form models to gauge the plausibility of their exclusion restriction.

	Prop. Democrat		Affirm. Action		Racial Resentment	
	(1)	(2)	(3)	(4)	(5)	(6)
Prop. Slave, 1860	-0.200*** (0.075)		-0.186*** (0.066)		0.859** (0.355)	
Slave State		-0.034 (0.034)		0.002 (0.031)		0.099 (0.135)
State Fixed Effects	✓		✓		✓	
1860 Covariates	✓	✓	✓	✓	✓	✓
50% Threshold Match	✓		✓		✓	
North-South Match		✓		✓		✓
N	329	181	329	181	274	171
R ²	0.365	0.113	0.263	0.090	0.290	0.099

*p < .05

Table 4: Columns (1), (3) and (5) show results of WLS regressions with state fixed effects and the 1860 covariates, for only the subset of counties that border a county in which proportion slave lies on the other side of the 50% threshold. Columns (2), (4) and (6) show difference between slave-state counties with very few slaves (less than 3% of the 1860 population) and non-Southern counties, matched on geography, farm value per capita, and total population. Coefficients are from a WLS regression on the matched data, that includes a dummy variable for Slave State as well as the 1860 covariates. In all regressions, weights are the within-county sample sizes. Standard errors in parentheses.

counties that are geographically close, and perhaps also politically, economically, and culturally similar (as [Banerjee and Iyer, 2005](#), do with Indian districts). It also drops certain former high slave counties that are in regions where all of the neighbors are also high slave areas—for example, the Mississippi Delta (compare [Figure A.1](#) with [Figure 1](#)). Columns (1), (3), and (5) of [Table 4](#) show that the results for all outcomes are robust to restricting our analysis to only these neighboring counties, even though this removes more than half of the counties in the sample. Thus, even within fairly geographically concentrated areas, there are strong, statistically significant differences between counties with higher and lower past concentrations of slaves.¹⁴

4.3 Counterfactual Comparisons to the North

If the effects of slave prevalence in 1860 that we estimate are genuinely attributable to the local prevalence of slavery, then we should see no difference in those areas of the South that were free of slaves and areas in other parts of the country that also

¹⁴These results are substantively similar when using different cutoffs below and above 50% (see [Appendix Table A.6](#) for these results). The conclusions are also the same when we take a slightly different approach to this robustness check: rather than using the 50% cutoff, we take in our sample only those counties that border a county in which the proportion of slaves differs by more than 20 percentage points.

did not have slaves, such as the North. In addition, if no such differences exist, then that would provide evidence against the alternative theory that it is the institutional legality of slaveholding, rather than the local prevalence of slaves, that is driving our results.¹⁵ Making these comparisons with the North also enables us to address what we consider to be the appropriate counterfactual, which is what contemporary political attitudes in the South would have been had slavery been as non-prevalent in the South as it was in the North.

We address these issues by examining differences between Southern counties with very few slaves in 1860 and non-Southern counties with no slaves in 1860. To do this, we restrict the data to counties in slave states where fewer than 3% of the county population was enslaved,¹⁶ and then match these counties to similar counties in non-slaves states on geography (latitude/longitude), farm value per capita, and total county population.¹⁷ Thus, we compare (1) counties from Southern states with very few slaves to (2) counties where slavery was against the law. We regress each of our three outcome variables on a dummy variable for the county being in a slave state, and the 1860 controls. Columns (2), (4) and (6) of Table 4 shows these results and confirms that there is very little difference between the Southern counties and the non-Southern counties beyond the effect of local prevalence of slavery. Thus, in the absence of localized slavery, it appears that the South would have had a distribution of present-day political beliefs indistinguishable from comparable parts of the North. This provides evidence that the effect that we see comes primarily from the local presence of many slaves, rather than state laws permitting the ownership of slaves.

5 Possible Explanations of Slavery’s Effect

Now that we have established that the prevalence of slavery in 1860 has a direct effect on the contemporary attitudes of Southern whites, we turn to exploring the possible explanations for this finding. Motivated by the literature within American politics

¹⁵Some parts of the North did not outlaw slavery, but its prevalence was never as high as in the Southern Black Belts. Moreover, slavery outside the South was outlawed by the mid-19th century.

¹⁶This analysis was fairly robust to the choice of cut-off; for example, choosing only counties in slave states that had up to 5% enslaved resulted in a comparable analysis.

¹⁷We use coarsened exact matching (CEM) on these variables, employing the default cut-points (Iacus, King and Porro, 2012, 2008). For non-slave states, the post-matched sample included counties in Arizona, New Jersey, New Mexico, New York, Ohio, Oklahoma and Pennsylvania; for the slave states, it includes Arkansas, Delaware, Kentucky, Maryland, Texas, Virginia, and West Virginia. Replicating this analysis with simple propensity score matching or genetic matching does not substantively change these results (available upon request).

	Prop. Democrat		Affirm. Action		Racial Resentment	
	(1)	(2)	(3)	(4)	(5)	(6)
Prop. Slave, Direct Effect	-0.140** (0.043)	-0.119** (0.043)	-0.116** (0.037)	-0.098** (0.037)	0.497** (0.190)	0.454* (0.189)
Prop. Black, 2000	0.163** (0.048)		0.078 (0.041)		-0.284 (0.205)	
State Fixed Effects	✓	✓	✓	✓	✓	✓
1860 Covariates	✓	✓	✓	✓	✓	✓
N	769	769	769	769	664	664
R ²	0.205	0.191	0.131	0.114	0.120	0.115
Model	WLS	Seq. g-est.	WLS	Seq. g-est.	WLS	Seq. g-est.

p < .05; *p < .01

Table 5: Estimates of the controlled direct effects of slavery on white attitudes net the effect of the contemporary proportions of African Americans. Columns (1), (3), and (5) simply include proportion black in the year 2000, while columns (2), (4), and (6) use sequential g-estimation of [Vansteelandt \(2009\)](#). Both approaches include weights for the within-county sample size. Standard errors in parentheses.

discussed above, we consider five possible explanations: racial threat, antebellum racism, rural versus urban differences, Civil War destruction, and geographic sorting. However, as we discuss below, we find mostly limited support for these theories. We therefore present evidence in Section 6 for what we believe is the more likely explanation concerning post-Civil War political and economic incentives.

5.1 Racial Threat (Contemporary Black Concentrations)

Perhaps the most appealing explanation for our results involves the possibility that slavery’s primary effect comes in the form of substantially increasing the concentrations of African Americans living today in what are former slaveholding areas. In particular, the local prevalence of slavery directly has led to high concentrations of blacks in the modern-day Black Belt, which, according to the theory of racial threat, would cause whites’ views to become more racially hostile. This is an observation that was made by [Key](#) and then subsequently developed by the expansive literature on racial threat (e.g., [Orey et al., 2011](#); [Giles and Buckner, 1996, 1993](#)). At first glance, the racial threat mechanism does provide a possible alternate explanation for our results. The geographic concentration of slaves in the antebellum South is highly correlated with the geographic concentration of African Americans in recent years: the correlation of percent slave in 1860 with black proportion in 2000 is 0.77. African Americans continue to live in the Black Belt, and they do so in large numbers.

Our strategy in addressing this issue is to check how much of our baseline results can be explained by contemporary black concentrations. We do so in two ways. First, as is common in much of the applied literature, we include in the baseline specification the mediator (here, proportion black in 2000 as measured by the 2000 U.S. Census) along with the treatment of interest (proportion of slaves in 1860). This analysis is shown in Table 5, columns (1), (3) and (5). The coefficient on the proportion slave in 1860 remains significant and even gets slightly stronger, thus suggesting that the direct effect of the treatment does not operate through the proportion black in 2000 (the mediator).

However, we are aware that these estimates could suffer from post-treatment bias (Rosenbaum, 1984); after all, the share of the black population is a direct consequence of the prevalence of slavery in the antebellum period (Key, 1949). As noted by many authors, simply including a mediator in a model as above is biased unless there are no unmeasured confounders for the effect of the intermediate variable on the outcome. Furthermore, if some of those confounders are affected by proportion slave, then including them in our regression model will bias the estimation of the direct effect of proportion slave (Petersen, Sinisi and van der Laan, 2006). We therefore replicate this analysis using use a method developed in the biostatistics literature by Vansteelandt (2009) that avoid the post-treatment bias problem. This method enables us to calculate the controlled direct effect of slavery, which is the effect of slavery if we were to fix the modern-day concentration of African Americans at a specific value. To implement the method, we use a two-stage estimator, called the sequential g-estimator, that estimates controlled direct effects when we have a set of covariates that satisfy selection on the observables (or no unmeasured confounders) for the intermediate variable (Vansteelandt, 2009).¹⁸ The exact procedure is as follows. We first estimate the effect of contemporary black concentration on white views today, controlling for all of our covariates including the additional covariates described in footnote 18. We then transform the dependent variable by subtracting off this effect. Finally, we estimate the effect of proportion slave on this transformed variable. This effect is the “direct effect” of slavery when fixing proportion black today at a specific value such as the national proportion black in 2000, which is .129 according to the U.S. Census.

¹⁸Drawing on the usual controls in the racial threat literature, the additional variables we include to help satisfy the the selection on observables assumption are log population in 2000, unemployment in 2000, log population density in 2000, percent of individuals with high school degrees in 1990, and log median income in 2000. The presented results assume no interaction between proportion slave and contemporary proportion black, but weakening this assumption does not change the findings.

We report the estimates from this more robust methodology in Columns (2), (4), and (6) of Table 5. When compared to the baseline estimates of Table 1 and the potentially biased estimates in Columns (1), (3), and (5), these results demonstrate that contemporary shares of black population have little influence on slavery’s effect on partisanship, attitudes on affirmative action, and racial resentment. Indeed, the coefficients on slave proportion are similar to those in Table 1 and are still highly significant. The difference between the estimation strategies implies that simply controlling for black concentration in 2000 in the OLS model led to mild, though anti-conservative, post-treatment bias. In the end, we see no evidence that slavery’s effects operate via contemporary black concentrations. And, moreover, once we account for slavery in 1860, contemporary black concentrations appear to have the opposite effect that racial threat theory would predict for Southern white attitudes. With the full controls from the first stage of the sequential g-estimator, the effect of proportion black today is no longer significant (Appendix Table A.4).

5.2 Antebellum Social and Political Attitudes

We argued that the demise of slavery led to differences between slave and non-slaveholding counties, but it could be that these differences existed prior to the Civil War. Jordan (1968), for example, argues that the origins of racial attitudes actually predate 1860 and may even go as far back as the start of the African slave trade in the 16th century. Given his argument, it is possible that slavery began to affect whites’ feelings towards blacks beginning in the antebellum period, or even before. Many historians, including Du Bois ([1935] 1999), argue that antebellum racism directly led to the strongly racist policies pursued by the South in the post-bellum era.¹⁹

We consider two possibilities. The first, which is precisely Jordan’s thesis, is the possibility that racist beliefs gave Europeans the motivation seek out Africans for the slave trade; that is, racism predated or developed jointly with the *origins* of race-based slavery. According to this thesis, in the American South, the presence of many slaves would primarily be a proxy for already existing racially hostile attitudes. The second possibility is that the act of having slaves caused whites to become more racist, and that this happened in the years prior to 1860. This could be due to the set of social practices and cultural norms needed to justify the institution. For our purposes,

¹⁹Though it is interesting to note that, as Du Bois ([1935] 1999) points out, the colonial South and North actually had suffrage for free Africans. Only in the late 18th and early 19th century did the North and South begin to restrict the civil rights of these free blacks.

	Prop Democrat		Affirm. Action		Racial Resentment	
	(1)	(2)	(3)	(4)	(5)	(6)
Prop. Slave, 1860	-0.198 [†] (0.117)	-0.165** (0.051)	-0.067 (0.103)	-0.130** (0.044)	1.780** (0.481)	0.694*** (0.223)
Prop. Slave, 1840			-0.136 (0.101)		-0.288 (0.446)	
Prop Slaveholder, 1860			0.107 (0.100)		-0.901* (0.455)	
State Fixed Effects	✓	✓	✓	✓	✓	✓
1860 Covariates	✓	✓	✓	✓	✓	✓
N	586	769	586	769	509	664
R ²	0.214	0.195	0.137	0.128	0.154	0.122

[†]p < .1; *p < .05; **p < .01

Table 6: The effect of slavery when adjusting for various proxies of antebellum attitudes. All models are weighted least squares with the within-county sample size as the weights. Standard errors in parentheses.

either of these two channels could explain our findings if such antebellum attitudes were passed down to successive generations. As an initial matter, however, we do note that the results are robust to the inclusion of several 1860s social and political covariates (discussed above), including the proportion of people who are mixed race, farm values, farm size, county Democratic vote-share, and the proportion of church seats in the county that were held by Methodist churches. In results not presented, the effect is also robust to including measures of the presence of freed blacks in the county, which we consider to be a strong indicator of antebellum racial attitudes. In addition, as we discuss in Section 6, the effects of slavery on another outcome, Presidential vote share, appear only after the conclusion of the Civil War.

However, as an additional test, we undertake two further analyses. First, to test whether racial attitudes predate the origins of slavery, we add the proportion of slaves in 1840 as a control in our baseline regression. The logic is as follows. If negative racial attitudes led people to acquire slaves, then slavery in 1840 is a useful proxy for those areas where negative racial attitudes were at their highest. That is, counties with more slaves in 1840 would have been those counties that had more racially hostile whites. Under the assumption that racial attitudes only affect slavery in 1860 through their effects on slavery in 1840, this analysis effectively controls for differences in antebellum racism. We report the results of these models in columns (1), (3), and (5) of Table 6. These results are largely consistent with our baseline models, albeit with greater uncertainty. This increased uncertainty is consistent with the fact that

the proportions of slaves in 1840 and in 1860 are highly correlated.²⁰ The estimated effects for proportion identifying as Democrat and racial resentment increase, while the effect for affirmative action is no longer significant. By and large, though, these results are very similar to the baseline results.

The second possibility involving antebellum attitudes could be that the very act of owning slaves is what caused whites to be more racially hostile. For example, a slaveowner employing corporal punishment could conceivably develop feelings of racial hostility as a way of minimizing the cognitive dissonance of inflicting pain on another person. If this mechanism is at work, to the extent that slavery affects attitudes today, it should be the fraction of the population that was *slave-owning*, not the fraction of the population that was enslaved, drives our results. After all, if whites became more racially hostile as a consequence of owning slaves, then counties with more slaveowners should be more racially hostile today than other counties, holding constant the proportion of slaves. To check this, we include in columns (2), (4), and (6) in Table 6 controls for the proportion of the county that *held slaves in 1860* as measured by the 1860 Census.²¹ The addition of this variable produces very little change in the estimated effect of proportion slave. Furthermore, the sign on proportion slaveholder is the opposite of what an antebellum attitudes explanation would predict: counties with more slaveholders are currently less conservative. However, we emphasize that even these differences fail to meet statistical significance across the dependent variables.

While these two tests cast doubt on the idea that antebellum explanations are the exclusive driver of our results, we note that they do not rule out all possible antebellum explanations. Specifically, as we demonstrate in Table 6, it could be the case that racism affected the proportion slave in 1840 and also separately the proportion slave in 1860, along with attitudes today. How this would work in relation to our non-results on slaveowners is less straightforward. For example, it could be the case that slave attitudes predate slavery and that the local attitudes (and not just slaveowners' own attitudes, or those of their immediate families) lead to increases in

²⁰The correlation coefficient between these measures of slavery is 0.94. We note that including slavery in 1840 leads to multicollinearity, the main consequence of which is larger standard errors (reflecting the increased uncertainty around the estimates). Thus, if anything, the analysis here is a conservative test of the effects of 1860 slavery. Additionally including proportion slave in 1850 does not meaningfully change these results.

²¹The results are qualitatively similar if slave-owning is measured either as a (1) share of the total population, (2) share of the total white population, (3) share of the total white male population, or (4) as the number of slave owners per family. These measures are all extremely highly correlated with slavery ($\rho > 0.93$) so as to produce higher standard errors.

	Prop Democrat		Affirm. Action		Racial Resentment	
	(1)	(2)	(3)	(4)	(5)	(6)
Prop. Slave, 1860	-0.194** (0.056)	-0.125** (0.043)	-0.164** (0.049)	-0.110** (0.037)	0.508* (0.250)	0.479* (0.190)
Civil War Destruction		-0.002 (0.009)		-0.004 (0.007)		0.044 (0.050)
State Fixed Effects	✓	✓	✓	✓	✓	✓
1860 Covariates	✓	✓	✓	✓	✓	✓
Rural Counties Only	✓		✓		✓	
N	569	768	569	768	475	663
R ²	0.171	0.194	0.158	0.130	0.135	0.122

p < .05; *p < .01

Table 7: The effects of slavery after eliminating large urban centers and controlling for Civil War destruction, as well as the effect of slavery on black arrest rates. All models are weighted least squares, with the within-county sample size as the weights. Standard errors in parentheses.

the shares of slaves between 1840 and 1860. Or, alternatively, it could be that the prevalence of slavery locally increased racial hostility within communities, and not just among those with first-hand experience or family connections to the ownership of slaves. We take the latter as perhaps more likely and also as an interesting and separate consequence of slavery. However, both explanations would have to survive the fact that we see the effect of slavery on another outcome, Presidential vote share, only arise post-Civil War, the results for which are presented in Section 6.

5.3 Rural versus Urban Counties

Another plausible explanation for our findings in Section 4 is that large slaveholding counties tend to be more rural today than counties that smaller slave proportions, possibly due to the fact that slaveholding counties had plantations and other large farms. Our results might therefore reflect the simple empirical fact that rural counties tend to be more conservative than urban ones (Frank, 2004; Bartels, 2006; Ansolabehere, Rodden and Snyder, 2006).

To examine this possibility, we remove from our dataset all counties with 1860 populations greater than 14,000, which is the fourth quartile for all Southern counties in 1860. Thus, we remove one quarter of the counties from our sample, specifically those that have historically been the most urban (for example, counties like Fulton County, GA, and Shelby County, TN—which are today among the most urban in the South). Removing these counties hardly changes the estimated effects of slavery, as indicated in columns (1), (3) and (5) of Table 7. In fact, the magnitudes of the

effects of slavery on each of the three outcome measures actually increase, and the effects continue to be significant. The effects of slavery are therefore unlikely to be attributable to the fact that former slaveholding counties are more rural.²²

5.4 Civil War Destruction

Another possibility is that societal relations in slaveholding counties were more adversely affected by the destruction brought about by the Civil War (1861–1865). The damage to infrastructure and property and the loss of life resulting from the War was extensive and much of it afflicted the South’s agricultural areas (Goldin and Lewis, 1975).²³ This could affect our analysis in a variety of ways. For example, in light of the federal government’s role in the war, it could be that whites in war-torn slave counties became more resentful of the federal government, and that the new residents of these counties have inherited this resentment, which they express through resentment towards blacks. Or, alternatively, it could be the case that Civil War devastation disrupted the social fabric of these communities, aggravating racial strife in the process (Collier et al., 2013).

In either case, we would expect the effect of slavery to weaken once we control for Civil War destruction. To examine this possibility, Columns (2), (4) and (6) of Table 7 control for U.S. Census measurements on the percentage drop in the average value of farms in the county between 1860 and 1870, which is a proxy for the extent to which the county was ravaged by the Civil War.²⁴ As Table 7 indicates, slavery’s effects on our three outcome measures are hardly affected by the inclusion of this variable. Furthermore, in results not presented here, we find that even when we include an interaction term between proportion slave and civil war destruction, this interaction

²²An alternative strategy is to restrict our attention to counties that are rural today as opposed to rural counties in 1860. This approach, however, potentially suffers from post-treatment bias since the prevalence of slavery in 1860 could affect population today. Mindful of this possible bias, we report the results of such an analysis in the Appendix, noting that the results are consistent with those of Table 7. Similar results are obtained when controlling for modern-day county population as opposed to 1860 county population.

²³The correlation between proportion slave in 1860 and our measure of the Civil War’s impact (described below) is positive, at 0.23.

²⁴We assume that ignorability is satisfied here for both slavery and Civil War destruction with the same set of covariates, which would make the effect on the slave variable the controlled direct effect. We believe that this is a more plausible assumption than that made with regards to the contemporary black population; the reason is because conditioning on 1860s covariates is likely to result in an accurate estimate of which counties suffered more destruction during the Civil War, but would probably not be sufficient to separately identify the effect of black concentrations in the 20th century.

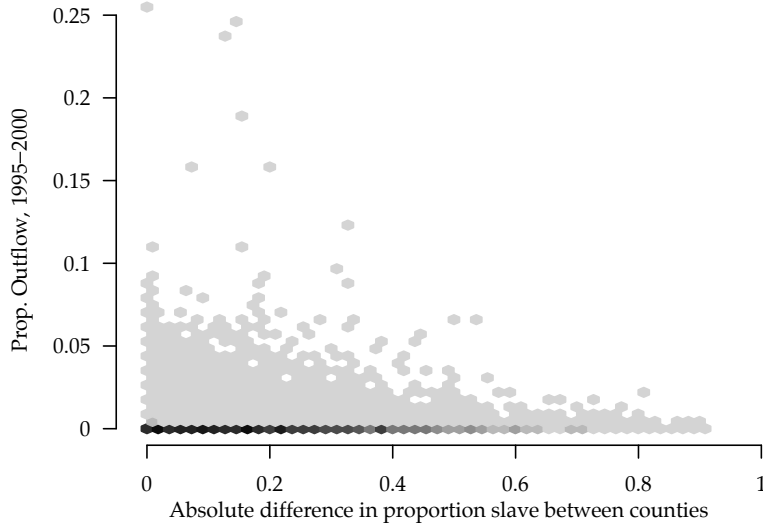


Figure 3: Relationship between county-to-county migration and the similarity of those counties on proportion slave. The darker the hexagon, the more county-dyads in that bin. The x-axis represents the absolute difference between the counties in term of proportion slave in 1860 and the y-axis represents the migration (1995–2000) from the sending county to the receiving county as a proportion of the sending county’s 2000 population.

is not significant. We recognize that change in farm values is not a perfect proxy for the massive, possibly non-pecuniary destruction caused by the Civil War; however, our finding does provide evidence against the idea that the effects we see here are due primarily to the Civil War having a disproportionate impact on slaveholding areas.

5.5 Geographic Sorting

The fifth possibility is that our results are explained by geographic population sorting. For example, it is possible that racially hostile whites from other parts of the South (or elsewhere) have, throughout the last 150 years, moved to slave counties to be around other whites that share their attitudes. In addition, it is possible that whites who hold more racially tolerant beliefs have been more likely to leave former slaveholding areas. Such in- and out- migration may arise due to “homophily”—i.e., the desire for people to interact with others who share their beliefs, attitudes, and other characteristics (Lazarsfeld and Merton, 1954).

If “homophily” is an important determinant of why and where people move, our interpretation of the results as reflecting the importance of the historical events follow-

ing the Civil War might be overstated.²⁵ While data availability make it impossible to rule out a geographic sorting explanation in its entirety, we present some suggestive evidence using data on between-county migration from 1995 to 2000 from the 2000 U.S. Census (Bureau, 2001). These data help us investigate the extent to which *contemporary*, as opposed to historical migration, explains our findings (see Dell, 2010, for a similar analysis). To be clear, in order for any kind of geographic sorting to explain our results, then two conditions must hold. The first condition is that there must be migration from low-slave areas to high-slave areas (or vice-versa); otherwise, there is no meaningful sorting of any kind. To test this condition, we use county-to-county migration data to calculate dyads of where people move from and where people move to, in this case in instances where they move away from counties with non-zero proportions of slaves to other areas. For each county dyad, we calculate the absolute difference in the proportion 1860 slave between the two counties; this allows us to assess how much migration exists between low-slave and high-slave areas. Figure 3 shows the relationship between these flows and the difference in proportion slave, and it demonstrates that, as the slavery differential grows, the migrations between counties drops considerably. (The drop is statistically significant at the usual levels.) Thus, the vast majority of contemporary migration is within low-slave areas or within high-slave areas, but not between.

The second condition for the geographic sorting explanation to explain our findings is that it must be the case that (1) racially conservative whites are moving into the high-slave areas, (2) racially liberal whites are moving out of high-slave areas, or (3) or some combination of the two. Even if there is very little migration between low- and high-slave counties (as shown in Figure 3), the distribution of political beliefs among these migrants could be so highly skewed so as to produce our main results. (For example, perhaps all of the out-migrants from high-slave counties are racially liberal and all of the in-migrants to high-slave counties are racially conservative.) With regard to the first possibility, this seems unlikely to be the primary mechanism as it relies on racially hostile whites moving to areas with extremely large proportions of African Americans. This they seem disinclined to do; for example, Farley et al. (1994), show that anti-black attitudes are correlated with stronger preferences for geographic segregation. More plausible is the second possibility, which presupposes

²⁵Consider, for example, a simple model in which slave prevalence has a small impact on post-bellum attitudes, and racist attitudes in subsequent years are randomly assigned to individuals, who sort heavily on the basis of homophily. It is straightforward to show in such a model that the initial effect of slavery gets compounded over time.

an exodus of racial liberals from former slave counties to non-slave counties. To check this, again using contemporary data, we examine the relationship between the proportion slave in 1860 and out-migration in 1995-2000 census records. We find that the proportion slave actually has a *negative* effect on contemporary out-migration (Appendix Table A.5). Thus, we have no evidence drawn from contemporary data for any of the necessary conditions behind a geographic sorting explanation. This counsels against this explanation as the exclusive factor behind our results.

Given this evidence, we are left to conjecture that the large movement of Americans across regions, especially in the last seventy years, has been for reasons that are mostly orthogonal to slavery in 1860. (For example, people move to areas where they can find jobs that suit them, rather than primarily to be around those that share their racial views.) In this case, our estimates of slavery’s direct effect on contemporary attitudes would actually be *conservative* estimates.

As a final test of the effects of historical migration patterns, we investigate the effect of slavery on the current-day attitudes of a group that did indeed experience historical mass migration—African Americans. Thanks to the Northern Migration of the 1920s and 1940s, thousands of African Americans left rural parts of the South for Northern industrial areas. If geographic sorting based on political views were at work, we would expect to see blacks in former slave counties differ with regard to political attitudes compared to those living non-slave areas. In Appendix Table A.2, we show that this is not the case. There are no systematic differences between black residents of former slave counties and former non-slave counties in terms of their partisan identification or their views on racial issues.

Thus, all of the evidence that we have suggests that geographic sorting is unlikely to explain our results. However, these tests are not definitive because different patterns of migration and sorting may have historically been at work for Southern whites than for Southern blacks. Even if this is true, this presents an interesting consequence of slavery and a likely channel of persistence.

6 An Incentive-Based Explanation

If slavery’s effect does not operate through the pathways we have excluded, then what explains our results? We return in this section to our preferred explanation, which concerns (1) political and (2) economic incentives.²⁶ The core of our expla-

²⁶We investigate economic incentives more formally in a companion paper, Acharya, Blackwell and Sen (2013).

nation is that the prevalence of slavery, coupled with its removal, created strong incentives for Southern whites to try to preserve their political and economic power by fomenting political violence, promoting racist customs and norms, and, to the extent legally possible, by advocating for racist institutions and laws. The more general idea behind our theory is that when an entrenched social and economic institution like slavery is abruptly and forcibly abolished, previously powerful groups (ex-slave-owning white elite) seek to establish other local and informal institutions that serve a similar purpose to that of the previous, forcibly abolished formal institution (slavery).²⁷ We argue that these anti-black attitudes and norms were passed on by elites to other members of the community, and then subsequently from parents to children. A testable implication of this theory is that the effects of slavery should more quickly wane when the political and economic incentives that we describe weaken. We present evidence showing that this is indeed the case.

6.1 Political and Economic Incentives Post-Civil War

Southern whites faced two interrelated threats upon the emancipation of slaves in the 1860s. The first was political. The abrupt enfranchisement of large numbers of blacks following the Civil War fundamentally threatened their control over local politics (Du Bois, [1935] 1999; Key, 1949; Kousser, 1974). This in turn produced incentives for white Southerners in former slaveholding counties to promote an environment of violence and intimidation against the newly emancipated freedmen, with the purpose of disfranchising them and keeping the local government under white control (Klinkner and Smith, 2002; Kousser, 1974). Since black populations were greatest in former slaveholding counties, especially those of the “Black Belt” (see Figure 1), it was in these counties that the Southern elite exerted greater efforts toward such repression and violence (Kousser, 1974).²⁸ This violence and repression both required and supported cultural practices and social norms that put blacks in an inferior social category to whites (Myrdal, 1944; Logan, 1954). Importantly, whereas institutionalized slavery only required a majority of (powerful) whites in the state to support it, widespread

²⁷This idea is also discussed briefly in Acemoglu et al. (2011), who explain that when Napoleon’s armies forcibly removed seigniorial institutions in Western Germany, local elites tried to set up informal institutions that served the same roles as the ones that were forcibly abolished.

²⁸Although they eventually set up local formal and informal institutions towards this end, such as Jim Crow laws, poll taxes, and literacy tests (Klinkner and Smith, 2002), it was through the threat of violence that white Southerners initially repressed blacks. This violence was often organized, and perpetrated by groups like the Ku Klux Klan (KKK); and it manifested itself in the many lynchings that were documented between 1880 and 1930.

repression and political violence required the support and involvement of entire local communities. These practices then produced racially hostile attitudes that have been passed down from one generation to the next, as we discuss shortly.

The second threat that the Southern white elite faced following the Civil War was economic. The emancipation of slaves in 1865 produced a major shock to the plantation economy: unlike in the slavery period, black farmhands now had to be paid market wages for their labor (Higgs, 1977; Alston and Kauffman, 2001; Wright, 1986). This suddenly, and significantly, raised labor costs for white plantation owners, threatening the viability of the plantation economy (Alston and Ferrie, 1993). White plantation owners had the incentive to do all they could to help suppress blacks' wages and to establish new forms of labor coercion that could replace slavery. Many white farm owners encouraged violence against blacks in their community, as well as other social practices that could be used to suppress black wages and mobility (Alston and Ferrie, 1993; Blackmon, 2008; Lichtenstein, 1996). For the purposes of our argument, this then produced racially hostile attitudes that were passed down from generation to generation, even after the South shifted away from labor-intensive farming in the 20th century (Alston and Ferrie, 1993).

We note that these incentives are closely related to, but still distinct from, the theory of racial threat, which predicts that black concentrations at given point in time affect white attitudes in the same time period. In contrast, our explanation posits an additional source of persistent racial hostility: the abrupt emancipation of blacks following the Civil War that incentivized violence and political repression, which have in turn been passed down in successive generations.

Due to these political and economic incentives, anti-black attitudes and cultural practices became local, strong, and persistent. Historically, these attitudes were transmitted by local elites to local masses in a fashion consistent with the many theories of elite influence in politics (see, e.g. Zaller, 1992). After these attitudes expanded from local elites to the local public, they were then passed down from one generation to the next, as suggested by the work of Campbell et al. (1980), Jennings and Niemi (1968, 1981), Glass, Bengtson and Dunham (1986) and Jennings, Stoker and Bowers (2009), who show that children often inherit the political attitudes of their parents. Indeed, our argument is also consistent with a growing literature in political economy, which has shown that the historical persistence of culture and norms can be found in other contexts.²⁹ If the racial attitudes that were determined by slavery in his-

²⁹This literature is voluminous and growing; Nunn (2009) provides a helpful overview. Particularly apropos are Dell (2010) who finds that the impact of the *mita* forced labor system extends 200 years

	Lynching Rate	Black Farm Tenant Share, 1925	Black Farm Owned Share, 1925	Black Farm Value, 1925
	(1)	(2)	(3)	(4)
Prop. Slave, 1860	16.200** (4.380)	0.241** (0.062)	-0.159** (0.057)	-3,953** (502)
State Fixed Effects	✓	✓	✓	✓
1860 Covariates	✓	✓	✓	✓
N	804	788	788	771
R ²	0.390	0.519	0.498	0.363

*p < .05; **p < .01

Table 8: The intermediate effects of slavery on various aspects of Southern counties in the early 20th century, including number of black lynchings per 100,000 blacks between 1882 and 1930, the share of black-operated farms that are under tenancy agreements, the share of black-operated farms owned by their operators, and the average value of black tenant farms. All regressions are weighted least squares, with the county acreage as the weights. Standard errors in parentheses.

torical times were across generations in a similar fashion, then that would lead to a sustained effect of slavery on racial resentment. As race became a more salient issue in American politics after the Civil War—and the two major political parties began to differentiate themselves increasingly on race-related policy issues—we would also begin to see a sustained effect of slavery on partisanship as well (Key, 1949).

6.2 Empirical Evidence

As affirmative evidence in favor of our incentives-based explanation, we present evidence from (1) lynchings and farm labor in the post-Reconstruction era, (2) the mechanization of agriculture starting in 1930, and (3) changes in the effect of slavery on partisanship over the last 150 years.

Lynchings and the Status of Black Farmers. A key component of the incentives-based explanation is that violence against blacks was an important tool for white elites and was used not only to disenfranchise blacks, but also to suppress their mobility and wages. Racial violence therefore aided the political and economic goals of the white

after its abolition and Nunn and Wantchekon (2011) who find that the slave trade still affects modern-day Africans' beliefs 150 years after it ended. Looking outside of coercive labor systems, Voigtländer and Voth (2012) find that anti-Semitic pogroms during the Black Death era in Germany predict anti-Semitic violence and deportations in the 20th century, while Tabellini (2010) find that European regions with high historical rates of literacy today have higher rates of liberalism and trust.

landowning class and also fed and propagated racist norms that, we argue, have persisted to now. Given this explanation, we would expect to see greater racist violence in slaveholding counties than other counties. While we do not have measures of all forms of violence in the post-Reconstruction era, we do have measures of one extreme form of violence: lynchings. We use lynching data from [Beck and Tolnay \(2004\)](#), who identified each of the lynchings reported by the NAACP, Tuskegee University and the *Chicago Tribune*, along with the counties in which they were committed.³⁰

In Column (1) of Table 8, we test the hypothesis that the incidence of black lynchings (per 100,000 blacks) between 1882 and 1930 is greater in counties that had higher proportions of slaves in 1860, conditional on state-level fixed effects and our 1860 covariates.³¹ The table shows that the relationship between slavery in 1860 and lynchings in this time period is strong and significant: a 10 percentage point increase in slave proportion in 1860 is associated with a rise of 1.62 lynchings per 100,000 blacks in the post-Reconstruction period. This result is exactly what our incentive-based theory predicts: more racist violence in those areas that were more reliant on slave labor.

Furthermore, if our theory is correct, then former slave areas should also see black farmers worse off due to this increased local violence. In Columns (2)–(4), we examine the effect of slavery on three outcomes for black farmers taken from the 1925 Agricultural Census ([Haines and Inter-university Consortium for Political and Social Research, 2010](#)) and this is exactly what we see. First, black-operated farms are more likely to be under tenancy agreements and black operators are far less likely to own their farms in former slave areas (each dependent variable is a share of black-operated farms). The paternalistic nature of tenancy agreements often led to being paid in kind as opposed to with cash, severely lowering their ability to either move out of tenancy or to another landlord ([Alston and Ferrie, 1993](#)). Perhaps due to this lack of mobility out of tenancy, black-operated tenant farms are far less valuable in former slave areas compared to non-slave areas, as seen in Column (4). Thus, the landed white elite appear to have been successful in reducing the economic status of blacks in the wake of emancipation.

³⁰The dataset covers ten Southern states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee. We restrict these data to only include black lynchings.

³¹We use weighted least squares with county area as weights and omit the logarithm of county area as a covariate, though this latter choice has no effect on the results.

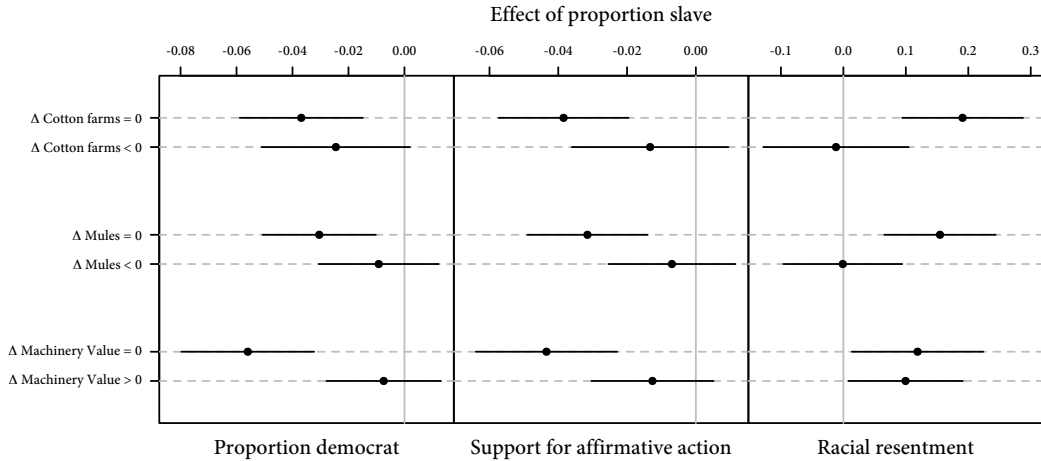


Figure 4: How the effect of slavery varies by changes in the agricultural industry. These are the results of three models for each dependent variable, where each model contains an interaction with county-level measures of (a) the change in cotton farms from 1925 to 1945, (b) the change in the number of mules per acre from 1925 to 1945, and (c) the change in the value of farm machinery from 1925 to 1945. All of the interactions are significant except cotton farms for proportion Democrat and machine value for racial resentment.

Mechanization of Agriculture. The pattern of racially motivated lynching, although predicted by our incentives-based explanation, could be predicted by other theories as well. To further adjudicate between the incentives-based explanation and other plausible alternatives (e.g., geographic population sorting or antebellum racism), we look at additional data on changes in farming technology. Our logic is as follows. The incentives-based explanation—especially economic incentives—relies on the fact that, historically, cotton has been a labor-intensive crop. Accordingly, large plantations were economically feasible in the antebellum era primarily because the institution of slavery provided cheap farm labor. As we have argued, however, once the shock of emancipation ended the steady supply of inexpensive labor, white planters immediately had to find new ways to keep labor costs low. For the cotton business model to survive, in other words, Southern white elites had to find quick access to low-cost labor. Thus, in the period following Reconstruction, Southern whites were incentivized to promote racial violence and anti-black norms and attitudes.

By the 1930s and 1940s, however, technological advancements, combined with environmental shocks such as the influx of the boll weevil pest into Southern cotton farms (Lange, Olmstead and Rhode, 2009) and the Mississippi floods of 1927 (Hornbeck and Naidu, 2013), led to the start of rapid changes in Southern agriculture. Machines began replacing manual labor and mule-powered pickers. This led

to a decrease in the number of mules on farms and a decrease in the number of farms producing cotton, as landowners curtailed tenancy for cotton farming. These changes made agriculture a less labor-intensive economic activity, driving down the demand for farm-labor and, thus, the need for labor coercion and the threat of violence against blacks that whites used to support it (Alston and Ferrie, 1993; Street, 1972; Day, 1967). Consequently, mechanization eroded the economic incentives for anti-black attitudes that were produced under the previous social order. The speed of these changes, however, varied considerably across the South, which, according to our theory, would lead to differential degrees of decay in anti-black attitudes. Specifically, the effect of slavery on white attitudes should be weaker in counties that more quickly saw reduced numbers of cotton farms, reduced numbers of mules, or increased value in their farm machinery; in such areas, the incentives for racially violent or hostile attitudes were weaker, because of the diminished demand for inexpensive black labor.

We test this prediction of our theory by comparing how the effect of proportion slave in 1860 varies according to three significant changes in economic conditions: (1) the change in the share of farms producing cotton between 1925 and 1945, which captures the decline in cotton farming during this period; (2) the change in the number of mules per 100,000 acres of county land from 1925 to 1945, designed to capture the shift away from costly manual labor; and (3) the total value of farm machinery per 100,000 acres of county land between 1925 and 1945, designed to capture shift toward mechanization.³² Given the economic incentives-based explanation, we would expect to see the effect of slavery attenuate with these measures.

This is confirmed in Figure 4. This figure plots the results of nine models, three for each of our main dependent variables. Each of these models augments the baseline models of Table 1 with an interaction between proportion slave in 1860 and the three economic measures: cotton decline (top), mule-use decline (middle), and increased mechanization (bottom). For each of these interactions, we plot the effect of slavery under no change in these variables between 1925 and 1945, and the effect of slavery when the changes are relatively large (the third or first quartile, depending on the direction of the effect). Our results indicate that the effect of slavery is lower for counties that saw earlier declines in cotton farm share and mules and those in which the

³²Each of these measures come from the U.S. Agricultural Census (Haines and Inter-university Consortium for Political and Social Research, 2010). We also note that this is an early form of mechanization since 1945 slightly predates the period that saw the most rapid mechanization of Southern agriculture. Indeed, according the U.S. Census the number of tractors in the South almost quadrupled between 1940 and 1975 (Haines and Inter-university Consortium for Political and Social Research, 2010).

value of machinery increased at a greater rate, earlier. For instance, when there was no growth in the value of farm machinery, a one standard deviation change in proportion slave leads to a roughly 6.4 percentage-point decrease in the proportion of whites identifying as Democrat. In counties with high growth in the value of farm machinery (the third quartile), that effect drops to less two percentage-points and is no longer statistically significant. These results are similar across all of our outcome measures, though in two cases these interactions are not statistically significant even though the point estimates are in the direction we would expect.³³ While post-treatment bias would ordinarily be a significant concern, there appears to be no effect of slavery on the change in cotton-farm share or the change in the machinery value. Thus, we treat these variables as if there were simply pre-treatment effect modifiers.³⁴ However, we do note that these estimates should be interpreted with caution. Although there is little evidence that these changes were related to slavery itself, it might still be the case that counties that saw differential growth in mechanization in the 1930s are distinct for reasons that may affect our outcome measures. Nevertheless, we see this as strong evidence in favor of the idea that the economic incentives we described were important in shaping racial attitudes: when these incentives were removed, the persistent effects of slavery attenuate.

These results could be consistent with a historical racial threat theory since mechanization of cotton production did eventually lead to decreases in the black populations in the cotton region (Hornbeck and Naidu, 2013). Could the waning effect of slavery in early-mechanized areas simply be due to changes in the black population in first half of the twentieth century? In Appendix Table A.7, however, we show that there is little basis for this hypothesis. Specifically, we recreate the above analysis using the declines in the proportion black from 1920 to 1940 and 1970 and find that areas with larger declines in the proportion black have, if anything, larger effects of slavery and many of the interactions fail to meet statistical significance. Thus it seems unlikely that racial threat is driving the attenuating effects that we see in the above analyses.

³³The interaction between proportion slave and change in cotton farm share is insignificant for proportion Democrat, and the interaction between proportion slave and change in machinery value is insignificant for racial resentment (both $p > 0.1$). The interaction for proportion Democrat and cotton farm share is significant at the 0.066 level.

³⁴Proportion slave does affect the changes in the number of mules, which might make the results in Figure 4 subject to post-treatment bias. Additional analyses, based on an interaction version of the above sequential g-estimator produces extremely similar results to those here.

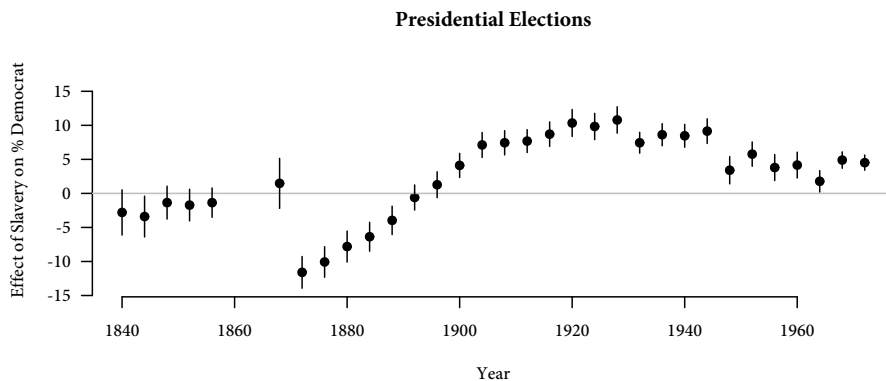


Figure 5: Effect of Proportion Slave on Vote for Democratic Presidential Candidate in the South and the difference between non-slave Southern counties and similar non-Southern counties. On the top panel, each point is the effect of a 25 percentage-point increase in slavery, and on the bottom panel each point is the coefficient on a Southern binary variable. Each come from separate regression of county-level Democratic share of the presidential vote on proportion slave (or a Southern dummy), conditional on a full set of covariates (including state fixed-effects for the regression with slavery).

Historical Effects of Slavery. If our explanation is at all persuasive, then we should see that the effects of slavery begin in the post-Reconstruction period (1867 onwards). That is, slavery should begin influencing Southern politics following Reconstruction and through the 20th century, possibly wearing off over time (something we discuss below). We should not see the effects of slavery pre-Reconstruction, a fact helpful to adjudicating between our theory and an explanation rooted in antebellum racism, which would predict differences before the Civil War.

To assess whether slavery’s effects can be detected earlier on, we examine the the relationship between our key explanatory variable, proportion slave in 1860, and county-level Democratic share of the Presidential vote between 1844 and 1972, conditional on the full set of 1860 controls. Until realignment in the 1970s and 80s, the Democratic Party was the racially conservative party, while the Republican Party was the racially progressive party (Key, 1949). Therefore, in this time period, we would expect to see counties that had large slave populations be more likely to have greater Democratic vote shares. However, we note that, since election outcomes are not disaggregated by voter race, the data here also include black voters. These black voters voted in large numbers following emancipation but were fairly quickly disenfranchised between 1870 and 1900. Full re-enfranchisement of black voters did not occur until 1965, with the passage of the Voting Rights Act.

To analyze the time trend, we calculate the WLS coefficient on the 1860 slavery variable for each Presidential vote. Thus, each point in Figure 5 represents a point estimate from a regression of county-level Democratic vote share on county proportion slave in 1860, conditional on the full set of covariates. A number of striking features emerge from these results. First, conditional on our 1860 covariates, there is very little difference between slave and non-slave areas before the Civil War. Thus, at least in terms of national party politics, differences in the views of whites in these areas seemed to emerge after the Civil War,³⁵ a finding that casts further doubt on the idea that antebellum racism is driving our results.³⁶

Second, even without racially disaggregated data, the trend in the effect of slavery on partisanship is consistent with a theory of Reconstruction-era repression of blacks, both in labor and in politics. The strong anti-Democratic bent of former slave counties in the immediate aftermath of the Civil War appears due to the high turnout of newly freed blacks, which was as high as 90% (Kousser, 1974). However, as white elites adopted new state constitutions, black codes, and other kinds of literacy and poll taxes designed to disenfranchise blacks (Kousser, 1974), and as white landowners encouraged racial violence to suppress black economic mobility and bargaining positioning, the effect of slavery quickly swings to become pro-Democratic. The effect reaches its peak in the 1920s and 1930s; by the 1960s, we see some early evidence of the Southern re-alignment, or the movement of the South toward the Republican party. Throughout, the difference in voting behavior between formerly large slave-holding counties and other counties is large and statistically significant. We also emphasize the difference between the effects in antebellum period (1840s and 1850s) and the 1920s and 1930s; each are time periods with almost an exclusively white vote and only in the latter do we see marked difference between slave and non-slave areas. Again, this is suggestive evidence that the political and economic incentives following the Civil War had a strong and swift impact on the distribution of political views in the South.

³⁵Indeed, Key (1949) points to the Civil War as a major division for the so-called Mountain Republicans: “The yeoman of the hills was reluctant to abandon the Union for the cause of planter and his slaves. When the people voted on secession or related issues, the upland farmers, showed hostility toward secession or at least far less enthusiasm than the lowlands” (Key, 1949, p. 282)

³⁶We note these presidential elections might not capture the full spectrum of possible political beliefs in the time period before the Civil War; however, we obtain similar results for Congressional elections. These additional results are available from the authors.

Parent-child transmission of beliefs We have focused on parent-to-child transmission of beliefs, but attitudes could be passed down from generation to generation through local institutions such as schools and churches. While each of these legacies is compelling theoretically, each has different implications for the long term changes in racial attitudes. With parent-to-child transmission, we would expect that moving adults from non-slave areas into slave areas would have no effect on the beliefs of those individuals. That is, racial attitudes (both positive and negative) might travel with individuals as they relocate over time. On the other hand, if local institutions cause these beliefs, then we should expect adults that move to slave counties to adopt the racial attitudes of their new homes. Thus, we might expect political beliefs to continue to be geographically sorted if local institutions perpetuate attitudes. If parent-to-child transmission holds, on the other hand, we might expect the geography of slavery to play a diminishing role over time as geographic mobility continues.

To test which story our data supports, we investigate the effect of slavery on groups for which we expect parent-to-child transmission to be minimal—children of immigrants. These second-generation immigrants living in the South are subject to the current local institutions but are unlikely to have had the legacy of slavery passed down to them through their parents. In Appendix Table A.3, we show the effect of slavery is very small, both substantively and statistically, for respondents with at least one immigrant parent. Essentially, for second-generation immigrants, there is little difference living in slave and non-slave areas. This provides suggestive evidence that, in this case, the parent-to-child transmission mechanism might be an important component of how geography of slavery affects attitudes.

7 Conclusion

In this paper, we have shown that an institution that was formally abolished over 150 years ago still has discernible effects on contemporary political outcomes. Slavery continues to affect how Southern whites identify politically, how they feel about affirmative action, and how they perceive African Americans. The results are robust to a variety of factors, and instrumenting for cotton suitability only strengthens our findings. To our knowledge, ours is the first study in American politics to quantitatively document the persistent effects of an institution that has long been abolished.

To explain these results, we offered a theory in which slavery affects racial attitudes historically, and these attitudes are passed down through generations to shape

contemporary attitudes. In addition we were able to rule out various other explanations that were motivated by previous theories and empirical findings in the American politics literature, including the influential theory of contemporary racial threat.

Our research also has substantial implications for the current study of American political behavior. After the pioneering work of [Campbell et al. \(1980\)](#) and [Jennings and Niemi \(1968\)](#), several scholars provided support for the theory that political beliefs, specifically partisanship, are passed down in successive generations from parents to children. For us, the next natural question arising from these findings is the following: If political beliefs are transmitted inter-generationally from parents to children, then what determined the political beliefs of the great-great-grandparents? In other words, how and when did these beliefs originate? The broadest interpretation of our contribution in this paper is that answers to such questions can be found by investigating the impact of historical institutions like slavery. Thus, we can look beyond white attitudes and explore other effects of these institutions on other aspects of contemporary society such as the persistent belief in linked fate among African Americans ([Dawson, 1994](#)) and the racial biases of the U.S. criminal justice system ([Alexander, 2012](#)).

This leads us to our final point. Within the study of American political behavior, the modern practice for survey researchers (and others) is to include only contemporaneous variables in their analysis. However, our paper reinforces the argument of [Pierson \(2004\)](#) that institutional and historical legacies are crucial for understanding modern politics. In light of this, we encourage future research to explore the important relationships between historical institutions and contemporary political behavior. As [Key \(1949\)](#) himself observed many years ago, social and historical forces have “an impact on political habit whose influence has not worn away even yet.” This might be the case not just for inter-racial relationships in the American South, but also in other areas of American politics, and elsewhere in the United States.

References

- Acemoglu, Daron, Camilo García-Jimeno and James A. Robinson. 2012. “Finding Eldorado: Slavery and long-run development in Colombia.” *Journal of Comparative Economics* 40(4):534–564.
URL: <http://www.sciencedirect.com/science/article/pii/S0147596712000601>
- Acemoglu, Daron, Davide Cantoni, Simon Johnson and James A. Robinson. 2011. “The consequences of radical reform: The French Revolution.” *American Economic Review* 101(7):3286–3307.
- Acharya, Avidit, Matthew Blackwell and Maya Sen. 2013. “Labor Coercion and Racial Attitudes in the Postbellum South.” Working Paper.
- Alexander, Michelle. 2012. *The new Jim Crow: Mass incarceration in the age of colorblindness*. The New Press.
- Alston, Lee J. and Joseph P. Ferrie. 1993. “Paternalism in Agricultural Labor Contracts in the U.S. South: Implications for the Growth of the Welfare State.” *American Economic Review* pp. 852–876.
- Alston, Lee J. and Kyle D. Kauffman. 2001. “Competition and the Compensation of Sharecroppers by Race: A View from Plantations in the Early Twentieth Century.” *Explorations in Economic History* 38(1):181–194.
- Ansolabehere, Stephen. 2010. “Cooperative Congressional Election Study, 2010: Common Content.” Cambridge, MA: Harvard University [producer].
URL: <http://projects.iq.harvard.edu/cces/>
- Ansolabehere, Stephen, Jonathan Rodden and James M. Snyder. 2006. “Purple America.” *The Journal of Economic Perspectives* 20(2):97–118.
- Banerjee, Abhijit and Lakshmi Iyer. 2005. “History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India.” *The American Economic Review* 95(4):1190–1213.
- Bartels, Larry M. 2006. “What’s the Matter with ‘What’s the Matter with Kansas?’.” *Quarterly Journal of Political Science* 1(2):201–26.

- Baybeck, Brady. 2006. "Sorting Out the Competing Effects of Racial Context." *Journal of Politics* 68(2):386–396.
- Beck, EM and Stewart E Tolnay. 2004. "Confirmed Inventory of Southern Lynch Victims, 1882–1930." *Data file available from authors* .
- Birdsall, Stephen S. 1969. "Preliminary Analysis of the 1968 Wallace Vote in the Southeast." *Southeastern Geographer* 9(2):55–66.
- Black, Earl and Merle Black. 1973. "The Wallace Vote in Alabama: A Multiple Regression Analysis." *The Journal of Politics* 35(03):730–736.
- Blackmon, Douglas A. 2008. *Slavery by Another Name: The Re-Enslavement of Black Americans from the Civil War to World War II*. Anchor Books.
- Blalock, Hubert M. 1967. *Toward a Theory of Minority-Group Relations*. Wiley Press.
- Blumer, Herbert. 1958. "Race Prejudice as a Sense of Group Position." *The Pacific Sociological Review* 1(1):3–7.
- Bureau, US Census. 2001. "County-to-County Migration Flow Files."
URL: <http://www.census.gov/population/www/cen2000/ctytoctyflow/>
- Campbell, Angus, Philip E. Converse, Warren E. Miller and Donald E. Stokes. 1980. *The American Voter*. University of Chicago Press.
- Collier, Paul, V. L. Elliott, Håvard Hegre, Anke Hoeffler, Marta Reynal-Querol and Nicholas Sambanis. 2013. "Breaking the Conflict trap: Civil War and Development Policy." Washington, DC: World Bank.
- Dawson, Michael C. 1994. *Behind the Mule-Race and Class in African-American Politics*. Princeton University Press.
- Day, Richard H. 1967. "The Economics of Technological Change and the Demise of the Sharecropper." *The American Economic Review* 57(3):427–449.
- Dell, Melissa. 2010. "The Persistent Effects of Peru's Mining *Mita*." *Econometrica* 78(6):1863–1903.
- Du Bois, William Edward Burghardt. [1935] 1999. *Black reconstruction in America, 1860-1880*. Free Press.

- Farley, Reynolds, Charlotte Steeh, Maria Krysan, Tara Jackson and Keith Reeves. 1994. "Stereotypes and Segregation: Neighborhoods in the Detroit Area." *American Journal of Sociology* 100(3):pp. 750–780.
URL: <http://www.jstor.org/stable/2782404>
- Faust, Drew Gilpin. 1988. *The Creation of Confederate Nationalism: Ideology and Identity in the Civil War South*. Louisiana State University Press.
- Frank, Thomas. 2004. *What's the Matter with Kansas? How Conservatives Won the Heart of America*. Henry Holt and Company.
- Giles, Micheal W. 1977. "Percent Black and Racial Hostility: An Old Assumption Reexamined." *Social Science Quarterly* 58(3):412–7.
- Giles, Micheal W. and Melanie A. Buckner. 1993. "David Duke and Black Threat: An Old Hypothesis Revisited." *Journal of Politics* 55(3):702–13.
- Giles, Micheal W. and Melanie A. Buckner. 1996. "Comment on "Beyond Racial Threat: Failure of an Old Hypothesis in the New South"." *Journal of Politics* 58:1171–1180.
- Glaser, James M. 1994. "Back to the Black Belt: Racial Environment and White Racial Attitudes in the South." *Journal of Politics* 56(1):21–41.
- Glass, Jennifer, Vern L. Bengtson and Charlotte Chorn Dunham. 1986. "Attitude similarity in three-generation families: Socialization, status inheritance, or reciprocal influence?" *American Sociological Review* pp. 685–698.
- Goldin, Claudia D. and Frank D. Lewis. 1975. "The Economic Cost of the American Civil War: Estimates and Implications." *The Journal of Economic History* 35(2):299–326.
- Haines, Michael R and Inter-university Consortium for Political and Social Research. 2010. "Historical, Demographic, Economic, and Social Data: The United States, 1790-2002." Inter-university Consortium for Political and Social Research (ICPSR) [distributor].
- Heard, Alexander. 1952. *A Two-Party South?* University of North Carolina Press.
- Hersh, Eitan and Clayton Nall. 2013. "Income-Based Voting in Local Racial Context: Rediscovering Geographic Legacies Using "Big Data"." Working Paper.

- Higgs, Robert. 1977. *Competition and Coercion: Blacks in the American Economy, 1865-1914*. Vol. 163 Cambridge; New York: Cambridge University Press.
- Hopkins, Daniel J. 2010. "Politicized places: Explaining Where and When Immigrants Provoke Local Opposition." *American Political Science Review* 104(1):40–60.
- Hornbeck, Richard and Suresh Naidu. 2013. When the Levee Breaks: Black Migration and Economic Development in the American South. Technical report National Bureau of Economic Research.
- Iacus, Stefano M, Gary King and Giuseppe Porro. 2008. "cem: Software for Coarsened Exact Matching." R Software Package.
- Iacus, Stefano M., Gary King and Giuseppe Porro. 2012. "Causal Inference Without Balance Checking: Coarsened Exact Matching." *Political Analysis* 20(1):1–24.
- Jennings, M. Kent, Laura Stoker and Jake Bowers. 2009. "Politics across Generations: Family Transmission Reexamined." *Journal of Politics* 71(3):782–799.
- Jennings, M. Kent and Richard G. Niemi. 1968. "The Transmission of Political Values from Parent to Child." *The American Political Science Review* 62(1):169–184.
- Jennings, M. Kent and Richard G. Niemi. 1981. *Generations and Politics: A panel Study of Young Adults and Their Parents*. Princeton University Press Princeton, NJ.
- Jordan, Winthrop D. 1968. *White Over Black: American Attitudes Toward the Negro, 1550-1812*. University of North Carolina Press.
- Katznelson, Ira, Kim Geiger and Daniel Kryder. 1993. "Limiting Liberalism: The Southern Veto in Congress, 1933-1950." *Political Science Quarterly* 108(2):pp. 283–306.
URL: <http://www.jstor.org/stable/2152013>
- Key, V.O. 1949. *Southern Politics in State and Nation*. Knopf Books.
- Key, V.O. 1984. *Southern Politics in State and Nation (New Edition)*. University of Tennessee Press.
- Kinder, Donald R. and David O. Sears. 1981. "Prejudice and Politics: Symbolic Racism Versus Racial Threats to the Good Life." *Journal of Personality and Social Psychology* 40(3):414–31.

- Kinder, Donald R. and Lynn M. Sanders. 1996. *Divided by Color: Racial Politics and Democratic Ideals*. University of Chicago Press.
- Kinder, Donald R. and Nicholas Winter. 2001. "Exploring the Racial Divide: Blacks, Whites, and Opinion on National Policy." *American Journal of Political Science* pp. 439–456.
- King, Gary. 1997. *A Solution to the Ecological Inference Problem: Reconstructing Individual Behavior from Aggregate Data*. Princeton: Princeton University Press.
URL: <http://j.mp/ecinfbook>
- Klinkner, Philip A. and Rogers M. Smith. 2002. *The Unsteady March: The Rise and Decline of Racial Equality in America*. University of Chicago Press.
- Knoke, David and Natalie Kyriazis. 1977. "The Persistence of the Black-Belt vote: A Test of Key's Hypothesis." *Social Science Quarterly* 57(4):889–906.
- Kousser, J. Morgan. 2010. "The Immutability of Categories and the Reshaping of Southern Politics." *Annual Review of Political Science* 13:365–383.
- Kousser, Morgan J. 1974. *The Shaping of Southern Politics: Suffrage Restriction and the Establishment of the One-Party South, 1880-1910*. Yale University Press.
- Lagerlöf, Nils-Petter. 2005. "Geography, institutions, and growth: the United States as a microcosm." Working Paper.
- Lange, Fabian, Alan L Olmstead and Paul W Rhode. 2009. "The Impact of the Boll Weevil, 1892–1932." *The Journal of Economic History* 69:685–718.
- Lazarsfeld, Paul F. and Robert K. Merton. 1954. "Friendship as a Social Process: A Substantive and Methodological Analysis." *Freedom and Control in Modern Society* 18(1):18–66.
- Lichtenstein, Alex. 1996. *Twice the Work of Free Labor: The political Economy of Convict Labor in the New South*. Verso Books.
- Logan, Rayford W. 1954. *The Negro in American Life and Thought*. Dial Press.
- Matthews, Donald and James Prothro. 1966. "Negroes and the New Southern Politics."

- Mitchener, Kris James and Ian W. McLean. 2003. "The Productivity of U.S. States Since 1880." *Journal of Economic Growth* 8(1):73–114.
- Myrdal, Gunnar. 1944. *Black and African-American Studies: American Dilemma, the Negro Problem and Modern Democracy*. Vol. 2 Transaction Publishers.
- Nunn, Nathan. 2008. Slavery, Inequality, and Economic Development in the Americas. In *Institutions and Economic Performance*. Harvard University Press.
- Nunn, Nathan. 2009. "The Importance of History for Economic Development." *Annual Review of Economics* 1(1):65–92.
- Nunn, Nathan and Leonard Wantchekon. 2011. "The Slave Trade and the Origins of Mistrust in Africa." *American Economic Review* 101(7):3221–3252.
- O’Connell, Heather A. 2012. "The Impact of Slavery on Racial Inequality in Poverty in the Contemporary U.S. South." *Social Forces* 90(3):713–734.
- Ogburn, William F. and Charles M. Grigg. 1956. "Factors Related to the Virginia Vote on Segregation." *Social Forces* 34(4):301–308.
- Oliver, J. Eric and Tali Mendelberg. 2000. "Reconsidering the Environmental Determinants of White Racial Attitudes." *American Journal of Political Science* pp. 574–589.
- Orey, Byron D’Andra, L. Overby, Peter K. Hatemi and Baodong Liu. 2011. "White Support for Racial Referenda in the Deep South." *Politics & Policy* 39(4):539–558.
- Petersen, Maya L, Sandra E Sinisi and Mark J van der Laan. 2006. "Estimation of direct causal effects." *Epidemiology* 17(3):276–284.
- Pettigrew, Thomas F. 1957. "Demographic Correlates of Border-state Desegregation." *American Sociological Review* 22(6):683–689.
- Pierson, Paul. 2004. *Politics in time: History, institutions, and social analysis*. Princeton University Press.
- Posey, Walter Brownlow. 1931. "Influence of Slavery upon the Methodist Church in the Early South and Southwest." *The Mississippi Valley Historical Review* 17(4):pp. 530–542.
- URL:** <http://www.jstor.org/stable/1916390>

- Reed, John Shelton. 1972. "Percent Black and Lynching: A Test of Blalock's Theory." *Social Forces* 50(3):356–360.
- Rogin, Michael. 1969. "Politics, Emotion, and the Wallace Vote." *The British Journal of Sociology* 20(1):27–49.
- Rosenbaum, Paul R. 1984. "The Consequences of Adjustment for a Concomitant Variable That Has Been Affected by the Treatment." *Journal of the Royal Statistical Society. Series A (General)* 147(5):pp. 656–666.
URL: <http://www.jstor.org/stable/2981697>
- Schoenberger, Robert A. and David R. Segal. 1971. "The Ecology of Dissent: The Southern Wallace Vote in 1968." *Midwest Journal of Political Science* 15(3):583–586.
- Street, James Harry. 1972. *The New Revolution in the Cotton Economy: Mechanization and its Consequences*. Johnson Reprint Corporation.
- Tabellini, Guido. 2010. "Culture and Institutions: Economic Development in the Regions of Europe." *Journal of the European Economic Association* 8(4):677–716.
- Vansteelandt, Sijn. 2009. "Estimating Direct Effects in Cohort and Case–Control Studies." *Epidemiology* 20(6):851–860.
- Voigtländer, Nico and Hans-Joachim Voth. 2012. "Persecution Perpetuated: The Medieval Origins of Anti-Semitic Violence in Nazi Germany." *Quarterly Journal of Economics* 127(3):1339–1392.
- Voss, D. Stephen. 1996. "Beyond Racial Threat: Failure of an Old Hypothesis in the New South." *Journal of Politics* 58:1156–1170.
- Wright, Gavin. 1986. *Old South, New South: Revolutions in the Southern Economy Since the Civil War*. Vol. 2 Basic Books New York.
- Wright Jr, Gerald C. 1977. "Contextual Models of Electoral behavior: The Southern Wallace Vote." *American Political Science Review* pp. 497–508.
- Wrinkle, Robert D. and Jerry L. Polinard. 1973. "Populism and Dissent: The Wallace Vote in Texas." *Social Science Quarterly* 54:306–20.
- Zaller, John. 1992. *The Nature and Origins of Mass Opinion*. Cambridge University Press.

A Appendix: Additional Results and Supplemental Information

	Prop Democrat		Affirm. Action		Racial Resentment	
	logistic		logistic		OLS	
	(1)	(2)	(3)	(4)	(5)	(6)
Prop. Slave, 1860	-0.525*	-0.530*	-0.411 [†]	-0.392 [†]	0.467**	0.434**
	(0.215)	(0.210)	(0.219)	(0.215)	(0.179)	(0.164)
Constant	16.400	15.800	20.100	18.700	-17.300	-14.500
	(15.600)	(15.900)	(16.200)	(16.300)	(14.800)	(14.500)
State Fixed Effects	✓	✓	✓	✓	✓	✓
Cluster-Robust SEs	✓	✓	✓	✓	✓	✓
1860 Covariates	✓	✓	✓	✓	✓	✓
Individual Covariates		✓		✓		✓
N	25,565	24,465	25,523	24,423	7,503	7,489
R ²					0.017	0.054
AIC	32,109	30,190	27,415	25,862		

[†]p < .1; *p < .05; **p < .01

Table A.1: Effects of slavery on individual white partisanship, support of affirmative action, and racial resentment. Cluster-robust standard errors in parentheses, clustered at the county level.

	Prop Democrat	Affirm. Action	Racial Resentment
	logistic	logistic	OLS
	(1)	(2)	(3)
Prop. Slave, 1860	0.374 (0.356)	-0.379 (0.405)	-0.290 (0.349)
State Fixed Effects	✓	✓	✓
1860 Covariates	✓	✓	✓
Cluster-Robust SEs	✓	✓	✓
N	5,647	5,642	1,831

*p < .1; **p < .05; ***p < .01

Table A.2: Effect of slavery on individual black partisanship, views on affirmative action, and racial resentment. Cluster-robust standard errors in parentheses, clustered at the county level.

	Prop Democrat	Affirm. Action	Racial Resentment
	logistic	logistic	OLS
	(1)	(2)	(3)
Prop. Slave, 1860	-0.284 (0.509)	-0.053 (0.545)	0.081 (0.625)
State Fixed Effects	✓	✓	✓
1860 Covariates	✓	✓	✓
Cluster-Robust SEs	✓	✓	✓
N	2,136	2,131	663

*p < .1; **p < .05; ***p < .01

Table A.3: Effect of slavery on individual partisanship, views on affirmative action, and racial resentment for respondents with one or more immigrant parents.

	Prop Democrat	Affirm. Action	Racial Resentment
	(1)	(2)	(3)
Prop. Slave, 1860	-0.050 (0.048)	-0.018 (0.042)	0.169 (0.215)
Log Population, 2000	-0.028* (0.013)	0.003 (0.011)	0.035 (0.059)
Log Population Density, 2000	0.052** (0.014)	0.023 [†] (0.012)	-0.125 [†] (0.064)
Percent High School Graduates, 1990	0.005** (0.001)	0.002* (0.001)	-0.007 (0.005)
Unemployment, 1999	0.003 (0.004)	-0.005 (0.004)	0.055** (0.019)
Median Income, 2000	-0.200** (0.046)	-0.200** (0.040)	0.814** (0.207)
Prop. Black 2000	-0.012 (0.058)	-0.072 (0.051)	0.162 (0.255)
State Fixed Effects	✓	✓	✓
1860 Covariates	✓	✓	✓
N	768	768	664
R ²	0.268	0.184	0.211

[†]p < .1; *p < .05; **p < .01

Table A.4: First stage estimates from the sequential g-estimation model of Table 5. Note that conditional on the past, proportion black today lacks explanatory power. While the estimates of proportion slave are insignificant in these models, their estimates possess large amounts of post-treatment bias due to the contemporary variables. Each model includes weights for the within-county sample size. Standard errors in parentheses.

	In-migration	Out-migration
	(1)	(2)
Prop. Slave, 1860	-0.024 (0.015)	-0.052** (0.018)
State Fixed Effects	✓	✓
1860 Covariates	✓	✓
N	804	804
R ²	0.171	0.151

*p < .05; **p < .01

Table A.5: Effect of slavery present-day migration.

	Proportion Democrat				
	(1) 30%	(2) 40%	(3) 50%	(4) 60%	(5) 70%
Prop. Slave, 1860	-0.129* (0.062)	-0.196** (0.068)	-0.200** (0.075)	-0.240† (0.129)	-0.397* (0.176)
N	393	393	329	210	106
R ²	0.300	0.355	0.365	0.277	0.348
	Support for Affirmative Action				
Prop. Slave, 1860	-0.041 (0.051)	-0.131* (0.057)	-0.186** (0.066)	-0.434** (0.109)	-0.166 (0.148)
N	393	393	329	210	106
R ²	0.188	0.214	0.263	0.217	0.336
	Racial Resentment				
	(1)	(2)	(3)	(4)	(5)
Prop. Slave, 1860	0.420 (0.316)	0.597† (0.331)	0.968* (0.381)	1.169† (0.634)	1.063 (0.983)
N	345	338	274	171	86
R ²	0.140	0.233	0.245	0.254	0.293
State Fixed Effects	✓	✓	✓	✓	✓
1860 Covariates	✓	✓	✓	✓	✓

†p < .1; *p < .05; **p < .01

Table A.6: Varying the cutoff for the neighbor matching analysis.

	Prop Democrat		Affirm. Action		Racial Resentment	
	(1)	(2)	(3)	(4)	(5)	(6)
Prop. Slave, 1860	-0.116*	-0.128*	-0.094*	-0.099*	0.279	0.145
	(0.052)	(0.057)	(0.045)	(0.049)	(0.233)	(0.253)
Prop Black Decline, 1940-1920	0.677*		0.740**		-1.949	
	(0.329)		(0.284)		(1.459)	
Prop Slave × Black Decline, 1940-1920	-1.077		-1.268*		5.190 [†]	
	(0.710)		(0.612)		(3.109)	
Prop Black Decline, 1970-1920		0.125		0.227 [†]		-0.078
		(0.148)		(0.127)		(0.644)
Prop Slave × Black Decline, 1970-1920		-0.157		-0.389		1.553
		(0.290)		(0.250)		(1.260)
N	769	768	769	768	664	663
R ²	0.197	0.193	0.135	0.131	0.121	0.123

[†]p < .1; *p < .05; **p < .01

Table A.7: How the effect of slavery varies by declines in the black population in the twentieth century.

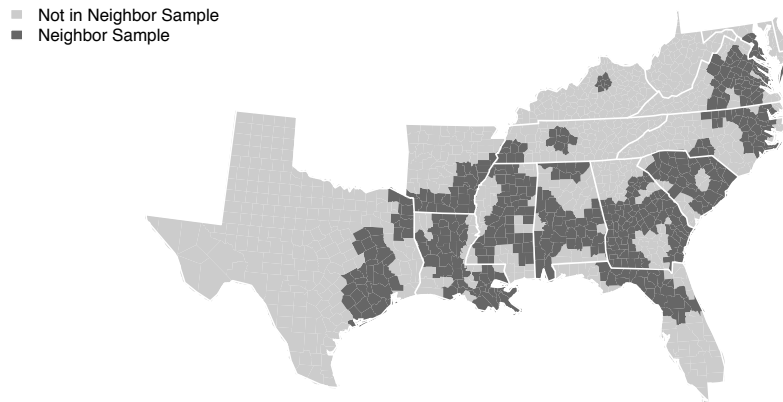


Figure A.1: Sample of pairs of neighboring counties that fall on different sides of the 50% proportion slave cutoff.