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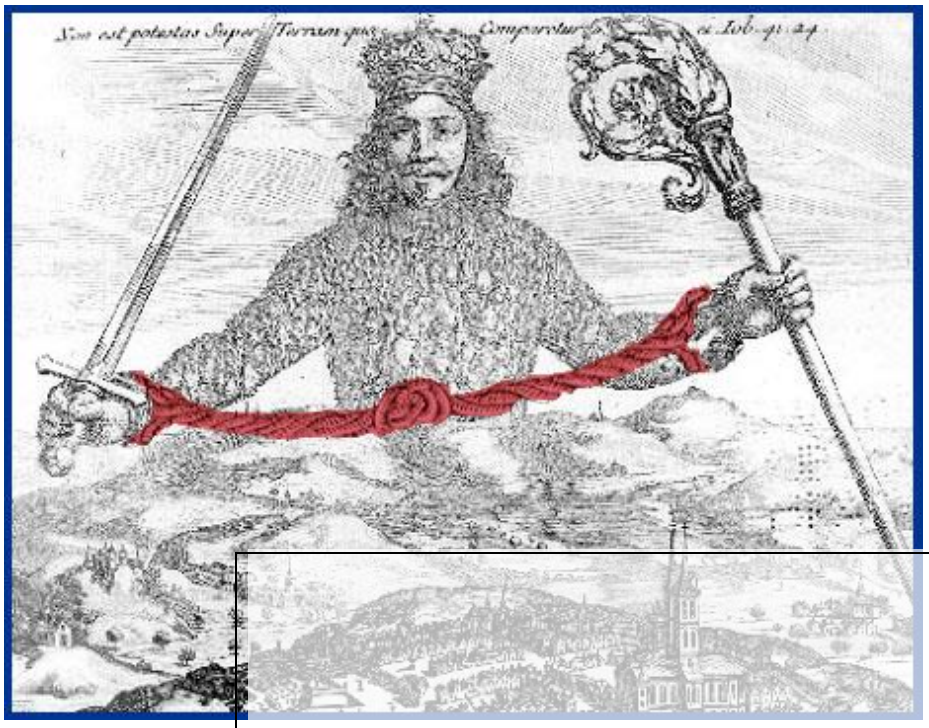

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The Reversal of Fortune, Extractive Institutions and the Historical Roots of Racism

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The Reversal of Fortune, Extractive Institutions and the Historical Roots of Racism

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October 25, 2018

Abstract

We show that differences in present levels of racism within a sample of former European colonies can be traced back to historical institutions. Our identification strategy relies on the reversal of fortune, a historical shock capturing the exogenous establishment of different institutions during the onset of European colonization. Using both OLS and multilevel analysis, we find extractive historical institutions to be a strong predictor of higher levels of racism independent of present and other explanatory factors at the individual and country levels. We argue and provide evidence this relationship is causal and operates through persistent internal norms, beliefs and values, resilient to changes in institutional and economic circumstances.

1 Introduction

Recent research demonstrates that racism or racial intolerance is a very relevant phenomenon linked to a number of economic and political outcomes important for economists. Racism has been shown to affect political preferences such as views on policies targeting minorities, reduced support for the welfare state, more support for residential segregation and restrictive immigration policy (Bobo 1991; Charles 2000, 2003; Ford 2006; Dustmann and Preston 2007). It has also been connected to health disparities, worse labor market outcomes and educational inequalities for minority groups (Ashraf 1994; Lang, Manove, and Dickens 2005; Goldsmith, Hamilton, and Darity 2006; Charles, Kofi, and Guryan 2008; Lang and Manove 2011; Lang and Lehmann 2012,; Dickerson and Jacobs 2013; Feagin and Bennefield 2014). Because of the relevance of the results of these many studies, it is prudent to attempt to understand the factors causing the emergence of racism.

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We are interested in whether racism is a phenomenon determined by short-term environmental circumstances or whether it is a long-term cultural value that persists over generations. Nowadays, we observe a rise in the number of expressions of political and social attitudes that could be considered racist. This has lead many to investigate current societal changes explaining this phenomenon. For example, Johnston and Lordan (2016) show, mainly among high skilled middle aged workmen, a 1 percentage point increase in unemployment leads to a 4 percentage point increase in racial prejudice. However, other studies like Voigtlander and Voth (2012) show that antisemitic preferences and violence can persist over centuries. A more robust understanding of the short or long-term origins of racism is important if policy makers want to develop effective strategies to mitigate consequences racism. The effectiveness of different policies could vary if racial attitudes are mostly motivated by current circumstances than if they are cultural values deeply ingrained in societies.

We contribute to this debate by utilizing an empirical strategy that allows us to overcome important identification problems. Any attempt to determine the direction of causality between culture, institutions and economic outcomes faces an important problem of endogeneity since all these variables influence each other. We handle these issues by using the well-known phenomenon of the reversal of fortune which represents the historical reversal of prosperity from pre-colonial times to the present caused by the exogenous establishment of different forms of institutions brought by European colonial powers. This strategy is first used by Acemoglu, Johnson, and Robinson (2002) who show that higher levels of urbanization and population density in the 1500s, both proxies for economic prosperity, to be associated with worst institutions and economic development in the present. The authors explain this result by arguing the areas with higher population density were ideal targets for European colonizers to establish extractive institutions while areas of lower population density received inclusive institutions. The implementation of these different forms of institutions is the driving factor behind the reversal of prosperity from 1500s to the present. Given this event is a quasi-natural experiment capturing the exogenous establishment of institutions, it allows us to disentangle the causal relationship between institutions and culture. Our results show, former colonies that historically had more extractive institutions have higher levels of racism today compared to colonies with inclusive institutions.

To test our hypotheses, we combine data on colonial institutions with a individual and country level measure for racism taken from the World Value Survey. We operationalize racism by using responses to the question, "On this list are various groups of people. Could you please mention any that you would not like to have as neighbors?", with racism capturing those who select "other races" as one of their answers. For measuring the reversal of fortune and proxying for historically extractive institutions, we use log of population density and technology in the 1500s. For current prosperity we use the variables standard in the literature for economic

development and institutional quality.

For our baseline results we use two subsamples: former colonies and former non-colonies. We separate our analysis into these two samples because the literature has shown the phenomenon of the reversal of fortune is restricted to post-European colonies and in other regions of the world, historical prosperity is generally a predictor of higher modern economic development which indicates a persistence of fortune, not a reversal (Nunn 2014 ; Spolaore and Wacziarg 2013). Thus, if our identification strategy is valid, we expect to find the opposite relationship between historical prosperity and our outcomes of interest across these two samples. We first confirm that a reversal of the fortune occurred in former colonies but not non-colonies in our data set. Next, we examine if our proxies for historically extractive institutions predict racism today. The results support our hypothesis as we find that colonies with more historically extractive institutions have higher levels of racism today. Additionally, the results, as predicted, do not extend to non-colonies.

In order to discard potential omitted variable biases, we control for fractionalization, genetic diversity, ancestry-adjusted variables, proportion of Europeans in 1900, proportion of descent from indigenous population, colonial origin, legal origin, religion, absolute latitude, trust, respect, obedience and control. As a final step to account for omitted features, we utilize an instrumental variable approach that produces consistent results. Overall, the outcomes of these control exercises support our initial findings that historically extrative institutions predict higher levels of racism in the present.

Further, we attempt to disentangle the two possible channels of causality between historical institutions and racism. The first possible mechanism is that the establishment of historically extractive institutions was a shock which permanently altered cultural norms, beliefs and values in a society toward higher levels of racism. However, it is also possible that extractive historical institutions only have an indirect effect on racism. Acemoglu, Johnson, and Robinson (2001,2002) show that the colonial experience is the main determinant of current levels of quality of institutions. Further, Berggren and Nilsson (2013) show that better institutional quality results in less racism. Ergo, extractive colonial institutions shaped levels of racism via its effect on modern institutions.

To disentangle whether racism is the product of current circumstances or a persistent internal norm dating back to the colonial experience we implement several strategies.

First, we re-run our baseline regressions while controlling for current variables for institutions, economic prosperity and human capital. If these current measures are strong mediators and thus, make our historical variables lose significance, there is evidence colonial institutions only have an indirect effect on racism through present day features. When accounting for these factors, we find consistent results compared to our baseline.

Next, we argue that if racism is caused by the lower quality institutions, then those individuals with a lower opinion of his countries' institutions should be more likely to be racist caeteris paribus. For this, we estimate, at the individual level, if the negative effect of historically extractive institutions remains when we control for measures of an individuals' confidence in the government and other individual and country level characteristics. Utilizing multilevel analysis, we find, for our colonial sample, extractive historical institutions predict a greater probability an individual will possess a racist attitude.

In our final step, we examine individuals facing a change of institutional environment to see whether their levels of racism depend on their new environment or on the historical factors of their country of origin. For this, we use a sample of immigrants in Europe taken from the European Social Survey and test whether their levels of racism respond to the economic and institutional characteristics of their countries of residence or rather to the historical level of extractiveness of institutions in their country of origin. The reasoning behind this approach is when individuals relocate, they bring their internal beliefs with them, a factor which is independent of their surrounding environment. As a result, if the historical institutions of an individual's origin continue impact their level of racism after immigration, we have evidence racism is an internal believe value and norm which persists even when an individual faces a new institutional and economic setting.

We find, even when accounting for the institutions of an individual's country of destination, historically extractive institutions predict higher levels of racism for immigrants coming from a former European colony. When we examine the same relationship for individuals who have migrated from non-European colonies, we see, consistent with other sections, a reversed or nonexistent relationship.

The conclusion of our paper is that historically extractive institutions, within the geographical context of former European colonies, have a causal impact on current levels of racism at both the individual and cross-country level. Moreover, the paper also identifies racism as an internal norm, cultural value or belief persistent to changes in current institutional and cultural environments. While we do not argue historical institutions are the only factor, past or present, affecting racism, the robustness of the connection we find cannot be explained by other variables.

This paper contributes to both the literature investigating the determinants of racism and the links between history, culture and institutions by finding one particular case in which a historical change of institutions causally shaped cultural values in the present. These results add to the recent studies showing that cultural beliefs and values are rooted in historical factors, such as institutions (Tabellini 2010; Nunn and Wantchekon 2011; Nunn 2012; Alesina, Giuliano, and Nunn 2013; Spolaore and Wacziarg 2013; Nunn 2014; Alesina and Giuliano 2015; Guiso, Sapienza, and Zingales (2016)). Finally, we add to the literature evaluating the long-term impact of colonization on current societies by showing extractive colonial institutions effect extends beyond current institutions to culture. A cul-

ture of racism could have helped perpetuate the lack opportunities for prosperity and democracy in former extractive colonies.

After the introduction in section 1, section 2 presents the theoretical context, section 3 describes the identification strategy, section 4 presents the results of the empirical analysis identifying the link between racism and historical institutions. Section 5 examines if the effect of historical institutions on racism operates through internal norms, beliefs or values and section 6 concludes.

2 Theoretical Context

In this section, we define racism, describe the reversal of fortune and present the two alternative explanations for how historical institutions shaped by the reversal of fortune, could impact levels of racism in the present.

2.1 Definition of Racism

Racism is a decision-making heuristic or rule of thumb for decisions on interactions with and treatment of individuals belonging to other racial groups in a world of uncertainty. These decision-making heuristics appear as values, beliefs or social norms which evolve and are passed to the next generation through a process of natural selection shaped by the comparative benefits of using alternative rules of thumb. (Boyd and Richerson 1985, 2005, Nunn 2012).

The heuristic is based on the belief that all individuals can be classified in racial groups and someones identity to that group conveys fundamental information about them. Thus, for a racist, the application of this heuristic guides their treatment, choices, preferences, beliefs and what social norms are applied when engaging in interactions with people of another race in an economic, political or social setting. This does not mean the use of such a heuristic always leads to optimal behavior but does reduce the cost of obtaining information on the proper course of action in a given situation (Nunn 2012). There are several potential motivations for individuals to be a racist and so, how racism manifests will not be homogenous across individuals, circumstances, communities or even countries. As a result, independent of the motivation for racism, there is justification for the unequal treatment of someone from a different racial group and that this discrimination is defensible or even preferable. For example, this can cover labor market decisions driven by statistical discrimination, i.e. assumed differences in racial productivity, all the way to views on racial superiority and acceptance of social interactions such as interracial marriage. Although inter-racial violence is not a necessary part of our definition, racist beliefs, preferences and rules can, in certain cases, justify or even demand aggressive or inhuman treatment of individuals belonging to certain racial groups if that particular group is considered to be a threat or hostile. Given all these factors, our understanding of racism fits within

the definition of culture by Guiso, Sapienza, and Zingales (2006), as *"those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation"*.

2.2 The Reversal of Fortune

Engerman and Sokoloff (1997), henceforth ES, and Acemoglu, Johnson, and Robinson (2002), henceforth AJR, argue and empirically show that European colonization played a vital role in shaping the path of development of a number of countries through historical political, economic and educational institutions. They hypothesize, where European colonizers found mineral resources, a large and concentrated native population, agricultural land suitable for large scale plantations or when they came upon a diseased environment, a lower number of Europeans would settle in these areas leading to the emergence of extractive institutions. When the opposite conditions were present, more Europeans immigrated resulting in inclusive institutions. This hypothesis is further corroborated by Easterly and Levine (2016), who indicate the pattern of European immigration was exogenously determined by similar geographical factors. Extractive institutions are described as areas where the elite established rules, laws and other government policies to institutionalize their economic and political advantage. According to AJR and ES, such policies included: restricted access to democracy, lack of political rights for most segments of society, unequal enforcement of property rights, a lower provision of public schools, unequal access to financial institutions and a general lack of economic opportunity for all. AJR empirically demonstrates, territories which were historically more prosperous saw the establishment of extractive institutions with these institutional characteristics persisting to the present. In turn, extractive institutions hindered economic development manifesting in lower GDP per capita in 1995. Areas which had a less concentrated native population saw a large share of European immigration. In this scenario, inclusive institutions were established, meaning, a set of institutions providing greater political access, legal protection and education to a larger share of the population. These institutions persisted to the present and were a driving factor leading to greater economic development in these countries. Thus, through the establishment of different forms of historical institutions, the pattern of more historical prosperous societies now being less economically developed compared those who were historically less prosperous emerged. A pattern AJR refers to as the reversal of fortune.

2.3 The Reversal of Fortune, Institutions and Racism

In this section, we present two possible hypotheses for how the reversal of fortune affects current levels of racism in former European colonies. The first hypothesis is that historical institutions impacted levels of racism indirectly through their per-

sistent effect on modern institutions [1]. The second hypothesis is the establishment of historically inclusive or extractive institutions was a shock which permanently altered equilibrium level of racism within societies which persists across generations.

2.3.1 Indirect Impact Through Modern Institutions

There are several reasons to think that the levels of racism in a society might be fundamentally determined by contemporary conditions. This conclusion is supported by the literature linking racial attitudes to education and the modern functioning of institutions (Hello, Scheepers, and Gijsberts 2002; Berggren and Nilsson 2013).

According to Berggren and Nilsson (2013, 2014), a society with the rule of law will have less racism because properly enforced laws ensure legal rules apply equally to everyone. As a result, there is no need to fear the actions of other racial groups since violators will be punished independently of their racial group which will foster interracial interaction. Economic freedom and economic prosperity ensuing from good institutions might also foster interaction between members of different racial groups leading to less racism.

Berggren and Nilsson (2013) stipulate economic institutions promoting market exchange, provide incentive structures which can lead to less racism through three possible mechanisms. First, because of repeated successful transactions with other races in the market place, individuals begin to internalize positive beliefs of other races [2]. Second, in seeking mutually beneficial exchange a racist individual might have incentives to substitute his racially-based heuristic by another more accurate heuristics that would make better use of available information and would not discriminate based on race. Becker (1957), for instance, under the condition of competitive markets, suggested that non-discriminating firms possess a competitive advantage over discriminatory firms in terms of productivity and access to a wider set of customers and workers. Discriminatory firms will hence be forced to change their racially-based heuristic or be driven out of the market. Third, markets provide a mechanism for taking fragmented societies consisting of small set of closed groups and transforming them into to a set of multiple interconnected individuals. This can lead to the expansion of social capital once particularized by racial groups to more a generalized application. These interconnected networks are expected to lead to more trust across individuals belonging to different racial groups facilitating the generation of values and social norms shared by larger pro-

[1] In our case, we use a broad definition of institutions, meaning it encompasses political, legal, economic and educational institutions.

[2] This argument is further supported by the contact theory. Allport (1954) developed the Intergroup Contact Theory, which proposes that, under the appropriate conditions, interpersonal contact is one of the most prominent ways to reduce prejudice. The theory argues, when there are encounters across racial and ethnic lines, the majority group members can communicate with minority group members and are then better able understand these groups resulting in a diminishment of their previously held prejudice. Additionally, other theories suggest interracial interaction might increase trust across groups and reduce the perception of other groups as a threat (Blumer 1958)

portion of the population. When social capital expands across racial groups, the expression of racist attitudes may become a violation of social norms coming at a social or economic cost. This phenomenon changes the incentive structure for exhibiting a racist attitude which will making it less attractive to possess.

The literature on racism also shows more educated individuals tend to be more tolerant. The relationship indicates educated individuals keep less social distance from ethnic minorities, meaning they possess a greater willingness to engage with other ethnic groups, are less likely to be prejudiced and ethnocentric (Selznick and Steinberg 1969; Hyman and Wright 1979; Jackman and Muha 1984; Hello, Scheepers, and Gijsberts 2002). Some of the main explanations of these findings are that education makes individuals more liberal, open-minded and less likely to view other races as a potential competitor for valuable resources (Hyman and Wright 1979; Hello, Scheepers, and Gijsberts 2002; Hello, Scheepers, and Sleegers 2006). As we can see, there is an abundance of evidence linking higher levels of education to less social distance and fear of other races, meaning a more educated society is likely to have more interracial interaction and cooperation leading to a lower racist equilibrium.

In our case, it has been already shown in the literature that former colonies with more extractive institutions have lower quality political, economic and educational institutions today (AJR and ES), therefore, it is to be expected to find an indirect positive correlation between the degree of extractiveness of colonial institutions and the levels of racism nowadays via modern institutions.

2.3.2 Direct impact of historical institutions on racism

Another explanation is that racism is a deeply ingrained cultural value in societies and is persistent to external changes which is supported by increasing number of studies that show a link between historical events and current cultural values exist [3] For this hypothesis, we argue the establishment of extractive or inclusive institutions by colonizers was a shock that permanently altered the equilibrium level of racism in societies and that this cultural heuristic persists across generations independent of changes to other environmental factors. In this section, we present two arguments for how the shock to institutions brought by the European colonial powers would shift the equilibrium level of racism.

In our first argument, members of the European colonial elites who controlled extractive institutions purposefully shaped beliefs, cultural norms and established social hierarchies which promoted racism as a mechanism divide to the population in order to maintain political and economic power and extract resources [4].

[3]See Buggle(2016) Becker et al. (2014) Guiso, Sapienza and Zingales(2016), Nunn and Watchekon (2011) or Alesina, Giuliano and Nunn (2013) among others.

[4]This argument presupposes that colonial powers were able to influence cultural values against the interest of the value-holders, which is contrary to the standard views that individuals choose their own values in order to optimize their own utility and that of their offspring (Tabellini, 2008). We believe that it was feasible for colonial elites to influence cultural values given the extent of their control over the administration, civil organizations,

Acemoglu, Robinson, and Verdier (2004) stipulate kleptocrats can be successful in extracting resources of the greater population if they can prevent coordination among the exploited. The utilization of such a strategy is commonly known as *divide et impera* [5]. There is evidence that colonial powers made deliberate use of this tactic in their interaction with different ethnic entities in colonized countries. For example, as Acemoglu et al. (2001) argue, extractive institutions established or perpetuated ethnic hierarchies within their institutional structures providing special benefits and power to certain ethnic groups. This, in turn, gave incentives for groups higher in the economic and political hierarchy to maintain the status quo in fear of losing these advantages even after independence from colonial powers. If implemented effectively, this strategy could encourage rivalries, grievances and sow distrust and animosity across ethic groups hindering the cooperation of local political entities against the colonizing powers [6]. Additionally, it is conceivable, colonial elites applied these tactics to the education system they controlled. For example, if they can instill fear, hatred and notions of racial or ethnic superiority, it will make coordination among these different communities against the ruling elites more difficult due to cultural barriers to cooperation.

There is further evidence suggesting that regimes can actually instill certain values on their population, in particular, there is an increasing literature showing that communist regimes affected the preferences of their citizens. For instance, Alesina and Fuchs-SchÃ$\frac{1}{4}$ndeln (2007) show that communism affected the economics preferences of Eastern Germans. Fuchs-SchÃ$\frac{1}{4}$ndeln and Masella (2016) try to identify the channel of this effect and show that an additional year of exposure to socialist education in Eastern Germany had a significant impact on education and labor market outcomes. Cantoni et al. (2017) show that a change of curriculum in P.R. China "led to more positive views of China's governance, changed views on democracy, and increased skepticism toward free markets" .

In the specific application to racism, when extracive institutions were present, powerful elites had a greater incentive and opportunity to instill racist attitudes in society. The reason extractive elites had a greater incentive is because, as ES highlights, the majority of their income was derived from the exploitation of slaves or the indigenous population through forced labor. As a result, by promoting a racist cultural heuristic which inhibits cooperation and interaction across these racial lines, they were protecting their interests. Additionally, by establishing and institutionalizing racial beliefs and hierarchies, they provided incentives for the maintenance of the cultural and institutional status quo even by certain members

education, art, and religion. For instance, Acemoglu et al. (2014) suggests that elites could take control of civil societies organizations and use them as a mechanism to shape and control culture in their own advantage.

[5] Posner, Spier, and Vermeule (2010) provide a taxonomy of different game theoretical settings demonstrating the logic of *divide et impera* and cites different historical examples of its implementation.

[6] An example of this tactic can be seen in the case of Rwanda. Nunn (2014) argues, while they do point out there is still debate on this theory, colonial rules exacerbated the already present tensions along ethnic lines by implementing policies to purposefully aggravate the already present class differences between the Hutus and Tutsis.

of the non-elite as they fear losing the advantages they possess compared to other races below them in society. For the case of inclusive institutions, these forces would not be present leading to a different equilibrium level of racism compared to societies that faced extractive institutions. Acharya, Blackwell, and Blackwell (2016) provide empirical support for this argument as they show white individuals in counties with a higher intensity of slavery in 1860 in the South of the United States are more likely to express both policy preferences and attitudes against black individuals today [7]. They argue in counties with a higher intensity of slavery, Southern whites had a greater political and economic incentives to perpetuate the prevailing racist norms and institutions to maintain control over freed black slaves. In turn, this lead to the divergence of county level political and personal racial attitudes seen in the present. Overall, it is plausible that the elites controlling colonial institutions had the incentive, ability and opportunity to establish, or at least exacerbated racism in extractive colonies. These actions contributed to both the preservation of these institutions and the divergence in levels of racism compared to societies with a different institutional environment seen today.

The second argument stipulates, while not a deliberate act, the differential shock to institutional quality endogenously lead to diverging equilibrium levels of racism. The establishment of inclusive institutions created an environment conducive for the formation of a more educated, open, cooperative, and thus, a more racially tolerant society. For the case of extractive institutions, the opposite forces would be present. The argumentation for why well-functioning political, economic and educational institutions would endogenously lead to lower level of racism applies the logic from the section *indirect effect through modern institutions* with one important difference. In this case, the effect of institutions is rooted in history not the present. Since we argue racism is a internal norm, value and belief, once this cultural heuristic was established, it becomes persistent even if quality of institutions changes at a later point. Such a hypothesis is consistent with the work of Guiso, Sapienza, and Zingales (2016), Putnam, Leonardi, and Nanetti (1993) and Tabellini (2010).

Jha (2013) identifies such a phenomenon by showing cities and towns in medieval India participating in overseas trade generally saw less Hindu-Muslim riots in the late 19th and early 20th centuries. Using the presence of natural harbors as an instrument for trading cities, Jha stipulates, interaction across religious lines were incentivized because Muslims could facilitate Hindu's access to markets in the Middle East. Thus, the benefits of cooperation across religions were greater in locations with access to international trade. Jha argues, the institutional environments which supported exchange and interaction between Hindus and Muslims had a higher likelihood of peaceful coexistence in the future.

There are additional studies showing that certain cultural values probably arose and persisted as an adaption to weak institutions. Grosjean (2014) finds that in

[7]This includes opposing affirmative action, and having racial resentment and colder feelings toward blacks

the United States "a culture of violence was transmitted to subsequent generations, but only in the South and, more generally, where historical institutional quality was low. The interpretation is that the Scots-Irish culture of honor prevailed and persisted as an adaptive behavior to weak institutions." Anderson, Johnson and Koyama (2017) show that persecution of Jews in pre-modern Europe was correlated with weather shocks but also that the intensity of this effect was stronger in weaker states. We assume that a similar effect might have taken place in colonies with extractive institutions. Those colonies with worst institutions might have experienced more tensions between racial groups compared to those with better institutions which would lead to a higher levels of racism.

Clearly, these two arguments, whether racism is deliberate or not, are not mutually exclusive. They both might have taken place and whether it was one or the other does not affect our results or alter our methodology.

2.3.3 Persistence of racism after the initial shock

The next question is how did the level of racism during colonial times, either instilled via colonial authorities or emerged as an adaption to colonial institutions, managed to persist over the Centuries and decades after independence. There is an extensive literature covering the issue of transmission of cultural values, both from a theoretical and from an empirical perspective. See for instance an exhaustive overview of the literature on transmission of cultural values Bisin and Verdier (2011) or Nunn (2012).

The literature has identified two main channels of transmission: horizontal and vertical. Vertical transmission takes place from parents to their offspring. See for instance Tabellini (2008), Fernandez and Fogli (2009) or Giavazzi, Petkov and Schiantarelli (2016) among many others. Horizontal transmission takes place among peers via imitation and socialization (see again Bisin and Verdier (2011) for a survey.) Oblique transmission is considered by Giavazzi, Petkov and Schiantarelli (2016) as a case of horizontal transmission in which the transmission stems from persons of a previous generation but different than the parents. This is the case of institutional transmission of values via teachers, preachers or public figures.

Some papers have also addressed the question of whether cultural values persist due to the persistence of institutions determining them or due to the internal persistence of cultural values. One example is Voigtlnder and Voth (2012) who show that the different local levels of anti-Semitism in Germany in medieval times persisted until modern times, controlling for all potential economic and institutional confounding effects, hence supporting the hypothesis that cultural values, particular those concerning the interaction with other racial or ethnic groups, can persist over 600 years. Therefore, there is sufficient evidence to believe that a transmission of racism over generations, relatively independently from the particular institutional and economic setting, might be possible.

3 Data and empirical strategy

3.1 Main variables of interest

Our measure for racism is based on one question in the World Value Survey: *"On this list are various groups of people. Could you please mention any that you would not like to have as neighbors?"* The answer is coded 1 if the individuals mention *people of a different race* their response and 0 if they do not [8]. For the country-level, we average this variable from individual level responses, by country, over all waves [9].

To capture historical institutions, we use 2 proxies, the log of population density and technological development in the 1500s. The measure for log of population density in the 1500s is taken from Acemoglu, Johnson, and Robinson (2002). One question may be, why are we not using the variable, as Acemoglu, Johnson, and Robinson (2002), urbanization in the 1500s? Given the already limited size of our sample for racism and the sparseness for the data points for urbanization, we chose to use another proxy that results in a larger set of observations. Additionally, while population density is a widely used measure for pre-colonial development, some argue there are drawbacks with regards to the measures quality and theoretical correctness in capturing historical prosperity. As a result, we use another variable which captures levels of development in the 1500s (Chanda, Cook, and Putterman 2014).

The second proxy is the level of technology in the 1500s, taken from Comin, Easterly, and Gong (2010) via Chanda, Cook, and Putterman (2014). The measurement index is based on the presence of 24 technologies across 5 different sectors within a given territory. The measure captures the availability of such technology around the 1500s in sectors which includes communication, agriculture, military, industry and transportation before European contact and colonization. Studies have demonstrated that this variable predicts levels of current income and higher population density in the 1500s (Comin, Easterly, and Gong 2010; Ashraf and Galor 2011). In terms of our sample selection, in order to replicate AJR's (2002) results, we use the same classification for what is and what is not a post-colonial country. As a result, only territories which were colonized by Western European powers are considered in our colonial sample. See the appendix for the list of

[8] Given our measure for racism is based on the question,*"On this list are various groups of people. Could you please mention any that you would not like to have as neighbors?"* and, this question or other follow up questions do not ask the motivation for such an answer, we cannot determine the reasoning behind their choice. However, the answer to this question does indicate an individual attaches some negative utility to having someone of another racial group as a neighbor in a broad sense. This means, we can identify individuals attaching different benefits to proximity or interaction with people based on racial distinctions which we interpret as the use of a racist base heuristic. As a result, we can identify an individual possessing a racially based heuristic without determining its underlying motivation. Our measure of racism is consistent with our definition, meaning, the identification of the presence of a broadly defined racist heuristic.

[9] The waves include: 1981-1984, 1990-1993, 1995-1998, 1999-2004, 2005-2009 and 2010-2014. Additionally, since many countries only have one data point, we choose to utilize averages across all waves. This is a common strategy used in the literature on generalized trust (Bjornskov and Mèon 2013).

countries considered as colonial and non-colonial. Additionally, we restrict our analysis to countries that always have data points for log of population density in the 1500s, technology index in the 1500s, log of GDP per capita in 2000 and technology index in the year 2000. One note on the use of our proxies for historical institutions is that these measures are not precise and thus, when we refer to historical institutions, we are speaking about institutions in very broad terms.

3.2 Identification strategy

The estimation of the causal impact of institutions on racism must handle several econometric problems, the first of which is reverse causality. We have already mentioned that racism can affect policy preferences which, in turn, affect the choice of institutions. Therefore, simply estimating the correlation between current institutions and current levels of racism would not allow us to claim causality. In order to avoid the problem of reverse causality, we use the reversal of fortune, or the imposition of extractive institutions on colonies that were more prosperous in the 1500s and inclusive ones on less prosperous colonies in the 1500s. The reversal of fortune acts as a quasi-natural experiment that allocated institutions of different quality to former colonies based on observable characteristics. This observable variable, namely prosperity in the 1500s, is known to be negatively correlated with prosperity in the present among former colonies (Acemoglu, Johnson, and Robinson 2002). This factor is thus a good proxy for the degree of extractiveness of colonial institutions. Another important component of using the reversal of fortune as an identification strategy is that the literature has shown it is a phenomenon limited to former European colonies. In other geographical contexts population density in the 1500s is a predictor of higher prosperity, not lower (Nunn 2014). If we are indeed capturing the impact of historically extractive colonial institutions on racism, we should not find the same relationship between racism and log of population density or technology in the 1500s across our colonial and non-colonial samples.

Second, the relationship between institutions and racism is likely to be affected by several other factors, hence the results could be biased. Therefore, we will control for potential confounding factors that the literature has identified. We are interested in testing whether our proxies for extractiveness of colonial institutions remain significant to the inclusion of possible controls and given the limited size of our sample, we choose to use parsimonious specifications and only add controls one by one.

Third, our goal is to differentiate whether racism is a cultural value that reacts to environmental characteristics or it is a persistent internal norm. For this, we will conduct three tests to see whether our proxy for extractive colonial institutions remains significant in predicting racism even after controlling for different proxies for current institutions.

4 Empirical Analysis

4.1 Reproduction of the Reversal of Fortune

The first step in our empirical analysis is to confirm that a reversal of fortune took place in our former European colonial sample and that such a relationship is reversed or non-existent for non-colonies.

In table 1, using OLS, we examine the association between historical institutions and modern political institutions, human capital, technological advancement and economic prosperity for colonial and non-colonial samples. We use 6 different measures for modern outcomes which includes: technology in 2000, two measures for log of GDP per capita, one measure for overall institutions, one measure for the rule of law and one for human capital proxied by average schooling.

Table 1 shows for our sample of ex-colonies, those who had higher pre-colonial prosperity faced a reversal of fortune across all outcome variables. Panel A reports the relationship between log of population density in the 1500s, for both our colonial and non-colonial samples and our 6 measures for present day outcomes. For our colonial sample, we see a negative and statistically significant relationship, at the 1 percent level, between log of population density and all the outcomes of interest. For the non-colonial sample, we find the opposite relationship with 5 of the 6 variables tested displaying a positive and statistically significant correlation with population density in the 1500s at the 1 percent level. The factor average schooling does not display a significant connection, however, it is positive in sign.

Panel B displays the results of the relationship between historical institutions, proxied by technological progress in the 1500s and our variables for modern prosperity. The results indicate that, for our colonial sample, technology in the 1500s is a weaker predictor for modern prosperity compared to log of population density as only 4 of the 6 coefficients display a statistically significant relationship. However, all the point estimates are negative in sign. When examining our non-colonial sample, all variables see reversal in sign with all coefficients being significant at least at the 10 percent level.

We conclude from this test that a reversal of fortune took place in our sample of former colonies but not in our non-colonies. Therefore, we can use prosperity in 1500s as a proxy for the degree of extractiveness of institutions.

4.2 Racism and Historical Institutions: Baseline results

Table 2 presents our baseline results. We examine if historical institutions predict present day levels of racism for both colonial and non-colonial samples. As an additional control, we test the relationship between current levels of racism and modern measures for prosperity and technological advancement. According to the literature Berggren and Nilsson (2013), we also expect to find a negative relationship between greater modern prosperity and racism across both samples. The

Table 1: Testing The Reversal of Fortune

	1	2	3	4	5	6
Panel A						
	Dependent Variable: Present Outcomes Below					
	Colonial Sample			Non-Colonial Sample		
	Technology Index 2000	Log GDP pc 2000	Log GDP pc	Technology Index 2000	Log GDP pc 2000	Log GDP pc
Log pop density 1500 CE	-0.140***	-0.642***	-0.976***	0.161***	0.549***	1.029***
	(-0.025)	(-0.121)	(-0.149)	(-0.034)	(-0.136)	(-0.27)
Observations	36	36	36	24	24	24
R-squared	0.537	0.399	0.513	0.376	0.271	0.365
	Colonial Sample			Non-Colonial Sample		
	WGI 1996	Rule Law	Avg Sch	WGI 1996	Rule Law	Avg Sch
Log pop density 1500 CE	-0.569***	-0.535***	-1.713***	0.708***	0.727***	0.969
	(-0.093)	(-0.115)	(-0.275)	(-0.2)	(-0.206)	(-0.568)
Observations	36	36	33	24	24	22
R-squared	0.549	0.439	0.51	0.275	0.279	0.131
Panel B						
	Dependent Variable: Present Outcomes Below					
	Colonial Sample			Non-Colonial Sample		
	Technology Index 2000	Log GDP pc 2000	Log GDP pc	Technology Index 2000	Log GDP pc 2000	Log GDP pc
Technology 1500 CE	-0.082*	-0.211	-0.497*	0.212***	0.696*	1.395*
	(-0.041)	(-0.21)	(-0.288)	(-0.072)	(-0.387)	(-0.728)
Observations	36	36	36	24	24	24
R^2	0.116	0.027	0.084	0.178	0.118	0.181
	Colonial Sample			Non-Colonial Sample		
	WGI 1996	Rule Law	Avg Sch	WGI 1996	Rule Law	Avg Sch
Technology 1500 CE	-0.304*	-0.201	-1.336***	1.256***	1.135***	1.817**
	(-0.169)	(-0.189)	(-0.476)	(-0.296)	(-0.393)	(-0.779)
Observations	36	36	33	24	24	22
R^2	0.099	0.039	0.201	0.234	0.184	0.091

Notes : All historical variables have been standardized . All regressions contain a constant. OLS coefficients are reported in each column. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

confirmation of this test reassures us that our identification strategy is correct. If the relationship between current racism and current prosperity would have the same sign as the relationship between current racism and pre-colonial prosperity, we would have an important identification problem.

The coefficients in table 2 confirm our hypothesis as all our measures for the reversal of fortune within the colonial sample predict higher levels of racial intolerance, while they display no effect or the opposite sign for the non-colonial sample. Column 1 indicates a 1 standard deviation increase in the log of population density in the 1500s is correlated with an increase in the average level of racism by 7.3 percent. Given the mean value of racism for the colonial sample is around 18 percent, this represents a change of around 39 percent. Additionally, the log of population density in the 1500s accounts for 40 percent of the variation of racism and displays a statistically significant coefficient at the 1 percent level. Technology in the 1500s, shown in column 3, displays a similar and slightly stronger relationship with racism in terms of sign, magnitude and R^2 as population density. When examining the non-colonial sample, we see, as hypothesized, the opposite relationship. All coefficients are negative in sign with technology in the 1500s displaying a statistically significant correlation, albeit at the 10 percent level.

In columns 2 and 4, we conduct the same analysis as in columns 1 and 3 for log of GDP per capita and the technology index in the year 2000[10]. We observe that when our proxies for prosperity are measured in 2000, there is a negative and significant relationship with racism across both samples. This means, for our colonial sample, more prosperous countries in the 1500s are now more prone to be racist, while the opposite is true for the association between modern prosperity and racism. Such a result supports that using the reversal of fortune is a valid identification strategy to capture the affect of historically extractive intuitions on racism in former European colonies. There is no other reason for explaining the change in sign for the relationship of prosperity and racism across time. Our interpretation is further supported by the outcomes in the non-colonial sample as both modern and historical measures for prosperity have a consistent and negative connection with racism.

4.3 Controlling for Fractionalization, Migration and Genetic Diversity

To make sure we are capturing the right causal channel and that the relationship is not due to omitted factors which the literature has shown to be correlated with racial preferences and institutions, we run a number of robustness checks in the

[10]We compare log of population density in 1500s with log of GDP in the present because we subscribe to the Malthusian theory. The Malthusian theory stipulates that in the pre-industrial periods, unlike the post-industrial period, an advancement of technology or increases in land availability did not result in long-term increases in income per capita but was reflected in the rise in population density. Thus, more technologically sophisticated societies had a denser population but not necessary a higher standard of living or greater income per capita. As a result, comparing log of population density in the 1500s and log of GDP per capita in 2000 is appropriate because they are the measures that best capture societal prosperity given their time periods (Ashraf and Galor 2011)

Table 2: Historical Institutions and Racism

	1	2	3	4
Panel A				
	Dependent Variable: Racism			
	Colonial Sample		Non-Colonial Sample	
Log population density, 1500	0.073***		-0.034	
	(0.015)		(0.25)	
Log of GDP per cap 2000		-0.034***		-0.031**
		(0.021)		(0.013)
Observations	36	36	24	24
R^2	0.402	0.157	0.083	0.230
Panel B				
	Dependent Variable: Racism			
	Colonial Sample		Non-Colonial Sample	
Technology Index, 1500 CE	0.093***		-0.105*	
	(0.020)		(0.59)	
Technology Index, 2000 CE		-0.254***		-0.257***
		(0.056)		(0.079)
Observations	36	36	24	24
R^2	0.406	0.176	0.210	0.321

Notes : All historical variables have been standardized . All regressions contain a constant. OLS coefficients are reported in each column. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

following three sections. Additionally, in all the following country level regressions in our control exercises, we account for absolute latitude as a proxy for geographical characteristics.

Alesina et al. (2011) argue colonialism had a pivotal role in the establishment of artificial national boundaries leading to many ethnic groups being separated into bordering countries without their consent. Ethnic diversity has also been linked to lower levels of trust across ethnic groups and worse institutional outcomes (Alesina et al. 2003; Hodler 2006; Putnam 2007; Stolle, Soroka, and Johnston 2008; Koopmans and Veit 2014b, 2014a). Thus, former colonies with extrative institutions could have higher levels of fractionalization due to the establishment of artificial states which, in turn, is the actual driving factor behind the relationship between higher levels of racism and institutions. To account for this possibility, we control for three forms of fractionalization that are ethnic, linguistic and religious. All measures are extracted from Alesina et al. (2003). The point estimates in table 4, columns 1 to 3, indicate fractionalization has a negligible effect on the relationship between racism and historical institutions.

Another omitted variable for a similar reason as fractionalization is modern migration. To account for the potential contact effect of modern migration on racism, we create our own variable which is the net migration over total population averaged across 1984-2012. Both measures are taken from the World Bank database with the created variable being labeled migration ratio. When we control for modern migration, we see little effect on our coefficients of interest compared to our baseline.

Genetic diversity could also be an omitted factor related to our variable of interest. Ashraf and Galor (2013) argue high levels of genetic heterogeneity have several consequences including; disarray, mistrust, a reduction in cooperation and a disruption of the socioeconomic order of society. In conjunction with this argument, Spolaore and Wacziarg (2009) and Spolaore and Wacziarg (2013) claim genetically rooted differences can create mistrust, a lack of communication and racial or ethnic biases across group distinctions. Galor and Klemp (2018) also find an important determinant of pre-colonial autocratic institutions which is genetic diversity. As a result, it is plausible that genetic diversity is an important omitted variable connecting racism and historical institutions due to the fact societies with higher levels of genetic diversity could have both worse historical institutions and higher levels of racism. When controlling for ancestry adjusted and unadjusted genetic diversity, both taken from Ashraf and Galor (2013), we see a slight drop in coefficient size but consistent outcomes in terms of sign and statistical significance.

From table 3, we see that controlling for different features of a populations' diversity and modern migration cannot account for the relationship between historical institutions and racism.

Table 3: Controlling for Fractionalization, Migration and Genetic Diversity

Panel A	1	2	3	4	5	6
	Dependent Variable: Racism					
Control Variables	Ethnic Frac	Lingustic Frac	Religious Frac	Migration Ratio	Genetic Diversity	AA Gentic Diversity
log population density, 1500	0.072***	0.072***	0.068***	0.079***	0.055***	0.077***
	(0.017)	(0.017)	(0.019)	(0.019)	(0.019)	(0.021)
Observations	35	35	35	36	36	30
R^2	0.421	0.415	0.417	0.422	0.446	0.424
Panel B						
	Dependent Variable: Racism					
Control Variables	Ethnic Frac	Lingustic Frac	Religious Frac	Migration Ratio	Genetic Diversity	AA Gentic Diversity
Technology Index, 1500 CE	0.094***	0.090***	0.083***	0.089***	0.071***	0.097***
	(0.024)	(0.023)	(0.024)	(0.020)	(0.022)	(0.024)
Observations	35	35	35	36	36	30
R^2	0.436	0.425	0.440	0.502	0.457	0.462

Notes : All historical variables have been standardized . All regressions contain a constant. OLS coefficients are reported in each column. All specifications control for absolute latitude. AA Genetic Diversity stands for Ancesrty Adjusted Genetic diversity. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

4.4 Controlling for Ancestry Adjusted Variables, Share of Europeans and Indigenous Population

Another potential confounding factor that could shape the degree of racism and institutions is the cultural characteristics migrants have brought with them from their origin country. Putterman and Weil (2010) created a variable incorporating the historical prosperity of descendants of populations who migrated to new countries after the 1500s. They argue, ancestry adjusted prosperity captures cultural characteristics migrants bring when immigrating and is a factor which shapes economic outcomes independently from historical institutions[11]. It is easy to extend this line of reasoning to racism as individuals who migrated to the new nations would have brought norms, beliefs and values regarding other races and institutions from their origin country.

To isolate the effect of historical institutions and account for historical population movements, we control for ancestry-adjusted variables for the respective measures for the reversal of fortune. This we means we control for ancestry adjusted log of population density and technology when regressing log of population density and technology index in the 1500s on racism respectively. The weights used to calculate our ancestry-adjusted variables are migration-weighted factors over the time frame 1500 to 2000 CE and are extracted from Putterman and Weil (2010) via Chanda, Cook, and Putterman (2014).

In addition to the specific ancestry-adjusted variables (log of population density and technology in the 1500s), we control for two other ancestry adjusted components. These measures include millennia of agriculture and the length of state history[12]. From table 4, columns 1, 2 and 3. we can see, ancestry adjusted features have little to no impact on the size or significance of our coefficients of interest.

Additionally, Easterly and Levine (2016) show that a large population share of Europeans during colonialization is related to greater economic development in the present. Similar to the arguments for ancestry-adjusted variables, Europeans may have brought cultural characteristics, technology and human capital with them during migration to the new world. As a result, the cultural traits of the Europeans themselves could be one of the factors that are shaping both racism and the colonial institutions they created. To account for this possibility, we control

[11] Putterman and Weil (2010) and Chanda, Cook, and Putterman (2014) show ancestry adjusted historical prosperity has a positive relationship with economic development. The positive relationship is present even in their former European colonial sample which generally has a negative relationship between unadjusted historical prosperity and current economic development.

[12] Ancestry adjusted millennial of agriculture measures the years since the population started to utilize agriculture to a greater degree than foraging as the primary source of food after being adjusted for historical population movements. Ancestry adjusted state history, is the proportion of time in which present-day countries had, first, a supra-tribal polity, second, how large the area in which the polity covered, and, finally, if it was internally developed or imposed by an external source adjusted for population migration. Chanda, Cook, and Putterman (2014), Putterman and Weil (2010) and Spolaore and Wacziarg (2013) find the ancestry adjusted variables of millennia of agriculture and state history to be positive and significant predictors of present income levels and thus, we find it important to control for these factors for additional robustness.

for the share of Europeans in the 1900s, a variable taken from AJR (2002). As an additional control for historical characteristics of the population, we account for the share of indigenous population descent from the 1500s, a measure which is extracted from Chanda, Cook, and Putterman (2014) via Putterman and Weil (2010).

When controlling for the percentage of Europeans in the population in the 1900s, displayed in column 4, we see a drop in the size and level of significance of our independent variables of interest. Log of population density sees a drop in its point estimate from 7.3 to 4.6 with a reduction in the level of its statistical significance from 1 to 5 percent. Technology in the 1500s sees a similar change. When controlling for the percentage of indigenous population in the 1500s, shown in column 5, the coefficient for log of population density and technology sees a reduction in its magnitude and statistical significance, from the 1 to 5 percent level but otherwise displays consistent results.

4.5 Controlling for Religion, Colonial Origin and Other Cultural Factors

Another potential confounding factor which could affect both racism and historical institutions is religion. Religion has been shown to affect levels of social capital and tolerance and the development of political and educational institutions (Fukuyama 2001; Guiso, Sapienza Zingales 2003; Becker and Woessmann 2009; Woodberry 2012; Acemoglu, Gallego, and Robinson 2014). To account for religion, we take variables from La Porta (1999) that measures the proportion of different religions in societies in the 1980s. When including religion in our specification, in table 5 column 1, we see little influence on our variables of interest in terms of magnitude, sign and statistical significance.

We also control for colonial identity in column 2, legal origin in column 3 and regional fixed effects in column 4. Variables on colonial identity and legal origin are extracted from La Porta (1999). The inclusion of colonial identity or legal origin into our specification results in little to no change to our coefficients compared to the baseline. However, the inclusion of regional fixed effects has a large impact on the size and significance of our coefficients, indicating the importance of regional characteristics in shaping levels of racism. Even so, historical institutions remain a significant factor in predicting racism. This result is not surprising given we argue that racism is persistent and hence, a large part of its variation from the mean is time-invariant and disappears with regional fixed effects.

Another important possibility is that racism maybe acting as a proxy for a broader set of cultural features. As shown by Tabellini (2010), trust, control, respect and obedience are shaped by historical institutions and education. To account for this possibility, we control for all four of these variables in four different

Table 4: Controlling for Ancestry Adjusted Variables, Share of Europeans, and Indigenous Pop

	1	2	3	4	5
Panel A					
	Dependent Variable: Racism				
Control Variables	Ancestry Adjusted Variables	Millenia of Agriculture AA	State History AA	Share Euro 1900	Indiginous Pop
log population density, 1500	0.068***	0.072***	0.070***	0.046**	0.066**
	(0.016)	(0.018)	(0.017)	(0.021)	(0.031)
Observations	36	36	35	36	36
R^2	0.414	0.420	0.415	0.445	0.412
Panel B					
	Dependent Variable: Racism				
Control Variables	Ancestry Adjusted Variables	Millenia Agriculture AA	State History AA	Share Euro 1900	Indigenous Pop
Technology Index, 1500 CE	0.104***	0.097***	0.107***	0.061**	0.067***
	(0.021)	(0.022)	(0.023)	(0.026)	(0.021)
Observations	32	36	35	36	36
R^2	0.390	0.459	0.485	0.455	0.496

Notes : Our proxies for historical institutions have been standardized . All regressions contain a constant. OLS coefficients are reported in each column. All specifications control for absolute latitude. AA stands for ancestry adjusted. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Controlling for Religion, Colonial Origin, Legal Origin and Other Cultural Factors

	1	2	3	4	5	6	7	8
Panel A								
	Dependent Variable: Racism							
Control Variables	Religion	Colonial Origin	Legal Origin	Regional Effects	Trust	Respect	Obedience	Control
log population density, 1500	0.062***	0.062***	0.073***	0.049**	0.074***	0.071***	0.076***	0.076***
	(0.013)	(0.018)	(0.018)	(0.021)	(0.016)	(0.020)	(0.017)	(0.023)
Observations	36	36	36	36	36	36	36	36
R^2	0.495	0.526	0.459	0.523	0.439	0.412	0.428	0.416
Panel B								
	Dependent Variable: Racism							
Control Variables	Religion	Colonial Origin	Legal Origin	Regional Effects	Trust	Respect	Obedience	Control
Technology Index, 1500 CE	0.083***	0.083***	0.087***	0.049*	0.092***	0.106***	0.095***	0.093***
	(0.022)	(0.027)	(0.024)	(0.025)	(0.023)	(0.028)	(0.021)	(0.025)
Observations	36	36	36	36	36	36	36	36
R^2	0.449	0.488	0.433	0.506	0.436	0.469	0.468	0.430

Notes : Proxies for historical institutions have been standardized . All regressions contain a constant. OLS coefficients are reported in each column. All specifications control for absolute latitude. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

specifications, columns 5 to 8 [13]. When controlling for these 4 features we see little change to the point estimates as they remain consistent in size, sign and significance.

4.6 Controlling for Different Samples, Outliers and IVs

In the literature, some specific countries are known to be outliers related to the reversal of fortune. Therefore, it is usual in this strand of literature[14] to check that the results are not driven certain sub-samples. To do so, we first run our baseline regression excluding the US, Canada, Australia, and New Zealand in column 1 and additionally excluding Singapore and Hong Kong in column 2. We also detect that Libya and Bangladesh present unusually high rates of racism, therefore we exclude them in column 3. The results presented in table 6 remain robust to the exclusion of these sub-samples.

Another method to address the impact of potential outliers is to run a MM estimation, which we conduct in column 4 (Yohai 1987 and Aelst, Hubert and Rousseeuw 2008). The outcome of this estimation displays consistent coefficients in terms of size, sign and significance. Overall, from this table, we see our analysis is robust to removing potentially important sub-samples and controlling for outliers.

As a final step to account for potential omitted factors and issues of measurement error with our historical data, similar to the strategy as AJR (2002), we utilize an instrumental variable approach using two different sets of instruments. In the first set of instruments, we use non-adjusted measures for millennia of agriculture and state history. Millennia of agriculture is a measure capturing the timing of the Neolithic revolution. Ashraf and Galor (2011), Putterman (2008) and Spolaore and Wacziarg (2013) empirically show that the earlier the Neolithic transition of a country, the higher their population density in the 1500s. Concerning state history, Chanda, Cook, and Putterman (2014) show that an early emergence of the state allowed for innovative technologies and larger historical populations. Hence, both millenia of agriculture and state history can be used as an instrument for prosperity in the 1500s that might be prone to measurement error. For our second set of instruments, we use log of population density in 1000 CE and technology in the year 0 CE taken from AJR (2002) and Comin, Easterly, and Gong (2010) respectively.

Columns 5 and 6 in table 6 demonstrate that the outcomes of utilizing the instruments for log of population density and technology in 1500s produce similar results compared to the OLS analysis displayed in table 2. In all cases there is little change in the size of the coefficients, with all outcomes being statistically

[13] All measures are extracted from the world value survey and are created in the same manner as our measure for racism. Trust captures generalized trust, control is the degree to which individuals feel they have control over their life, and respect and obedience measure respondents' answers to the questions, how important it is to teach children tolerance and respect and obedience.

[14] See AJR (2002) or Chanda, Cook, and Putterman (2014) among others

significant at the 1 percent level. The $p-$value for the Hanson $j-$statistic and the $F-$statistic for weak identification are also reported. The results of these tests support the validity of our instruments. The first stage of these regressions are reported in the appendix. Overall, we can see the use of an instrumental variable approach further supports the notion that historical institutions have a causal impact on racism and are not due to other omitted factors.

5 Racism as a Persistent Internal Norm or a Result of Present Institutions?

To this point we have provided evidence decedents in former European colonial societies that had extractive institutions are more likely to be racist and this relationship is causal. However, the question still remains, through what channels do extractive institutions alter the evolution of the cultural norm of racism? Is it indirectly through reducing the quality of modern institutions or directly through a permanent shift in internal norms? In this section, we utilize three different empirical strategies disentangle these two possible channels.

5.1 Cross-Country Analysis Controlling of Present Day Prosperity

The first step in trying to determine the channel of causality is to re-examine our baseline specification from table 2 while simultaneously controlling for prosperity and different measures for current institutional quality at the cross country level to see if these present day factors mediate the relationship between historical institutions and racism. If they do, we have evidence historically extractive that institutions shape racism via modern institutions and or prosperity. Table 7, columns 1 and 2 show the correlations between racism and historical institutions while controlling for GDP per capita and technology in the year 2000 respectively. In both columns, the coefficients for historical institutions are consistent in sign, size and significance compared the baseline model in table 2. In column 3, we account for the general institutional setting, measured by the average of the world governance indicators in 1996, and in column 4, we control specifically for the rule of law. In column 3, we see a general drop in the magnitude of our coefficients of interest, however, both maintain their sign and level of significance. Column 4 shows that controlling for the rule of law results in almost no change to the point estimates for historical institutions.

In column 5 of table 7, we control for average schooling which also results in little variation in the results. Column 6 controls for economic institutions, proxied by economic freedom following Berggren and Nilsson (2013)[15]. The results of table 7 provide evidence that historically extrative institutions have a direct impact on

[15]We choose economic freedom as our proxy for economic institutions because Berggren and Nilsson (2013) empirically show, different aspects of economic freedom can foster tolerance.

Table 6: Controlling for different outliers, samples and IVs

	1	2	3	4	5	6
Panel A						
	Dependent Variable: Racism					
Control Specifications	Excluding Neo-Europe	Excluding Sing, HK and Neo-Europe	Excluding Bangladesh and Libyia	MM	IV 1	IV 2
log population density, 1500	0.075*** (0.019)	0.090*** (0.019)	0.053*** (0.014)	0.062*** (0.018)	0.085*** (0.029)	0.070*** (0.020)
Observations	32	30	34	36	35	32
R^2	0.325	0.378	0.406		0.399	0.432
p-value of Hansen J statistic					0.955	0.326
F stat for weak identification					16.909	79.459
Panel B						
	Dependent Variable: Racism					
Control Specifications	Excluding Neo-Europe	Excluding Sing, HK and Neo-Europe	Excluding Bangladesh and Libyia	MM	IV 1	IV 2
Technology Index, 1500 CE	0.085*** (0.022)	0.100*** (0.022)	0.069*** (0.018)	0.083*** (0.023)	0.092*** (0.027)	0.122*** (0.033)
Observations	32	30	34	36	35	32
R^2	0.333	0.422	0.452		0.428	0.401
p-value of Hansen J statistic					0.686	0.869
F stat for weak identification					52.948	27.958

Notes : Proxies for historical institutions have been standardized . All regressions contain a constant. OLS coefficients are reported in each column. We control for absolute latitude in all regressions. IV 1 entails unadjusted state history and millennia of agriculture. IV 2 entails log of population density in 1000 and technology index in 0 CE . Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 7: Controlling for Present Outcomes Variables

	1	2	3	4	5	6
Panel A						
	Dependent Variable: Racism					
Control Variables	Technology Index 2000	Log GDP pc 2000	WGI 1996	Rule Law	Avg Sch	Economic Freedom
log population density, 1500	0.088***	0.083***	0.072***	0.076***	0.082***	0.064***
	(0.026)	(0.024)	(0.019)	(0.017)	(0.020)	(0.018)
Observations	36	36	36	36	33	36
R^2	0.431	0.429	0.412	0.415	0.452	0.417
Panel B						
	Dependent Variable: Racism					
Control Variables	Technology 2000	Log GDP pc 2000	WGI 1996	Rule Law	Avg Sch	Economic Freedom
Technology Index, 1500 CE	0.081***	0.086***	0.078***	0.084***	0.082***	0.078***
	(0.023)	(0.022)	(0.019)	(0.020)	(0.023)	(0.019)
Observations	36	36	36	36	33	36
R^2	0.454	0.465	0.500	0.490	0.469	0.515

Notes : Proxies for historical institutions have been standardized . All regressions contain a constant and contol for absolute latitude. OLS coefficients are reported in each column. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

shaping modern levels of racism independently of present day institutional quality and prosperity .

5.2 Individual Level Analysis WVS

Our second step in identifying if racism is an internal norm is to account for an individual's view on the quality of institutions in their home country. Individuals may have more animosity towards other races not because they posses an internal norm of racism but because they lack confidence in their government to operate effectively. A lack in government quality may lead societies to rely more heavily on racial groups as a means of social, political and economic protection leading to greater racial biases. If this hypothesis holds, we expect individuals who consider their institutions to be of low quality will be more likely to be racists compared to those individuals with a better opinion about the quality of government. If the connection between racism and historical institutions operates through this the channel, controlling for a person's confidence in the government should make the coefficient for extractive historical institutions lose its significance.

To test this, we re-estimate our baseline regression at the individual level while controlling for a person's confidence in the government along with other individual and country level characteristics for the same sample of countries.

For our measure of racism, we use the same question as the country level variable before it was aggregated. As a result, racism now takes the value 0 or 1, with 1 indicating an individual does not want to have someone of a different *race* as a neighbor. For our proxies for historical institutions, we use the same country level variables, log of population density and technology in the 1500s.

Given we combine data from the individual and country levels, our data is hierarchical and clustered and thus, if we use simple OLS it will increase the probability of a type 1 error due to the underestimation of standard errors because they do not possess a normal distribution (Klein et al. 2000). To account for the nature of our data, we use hierarchical linear modeling methods. To estimate the effects of historical institutions, country level data, on racism, individual level data, we use a linear multilevel random effects model. In multilevel methods, random effects refer to group-specific factors, in our case historical institutions that are assumed to influence the dependent variables. In using random effects, we assume, unobserved country-specific effects are randomly distributed with a mean of zero, have constant variance and are uncorrelated to the predictor variables. These assumptions allow the constant term to vary randomly across countries (Autio, Pathak, and Wennberg 2013). Using multilevel analysis has two advantages: first, it allows us to test if the connection between racism and historical institutions extends to the individual level, with the additional benefit of the examination being in a far larger sample size, ranging from 101,356 to 50,694 individual observations. Second, it allows us to more precisely control for an individual's perception on

the functioning of their institutions and other individual characteristics such as education and income which are not captured in country level analysis.

Table 8 column 1 reports the relationship between racism and our 2 different measures for historical institutions with only individual level controls. Consistent with our baseline results in table 2, there is a robust, positive and statistically significant relationship between racism and historically extractive colonial institutions. These results indicate worse historical institutions are predictors of a higher probability an individual will be racist and that this relationship does not operate through confidence in the government. However, given we are not utilizing a model with country fixed effects, we need to account for omitted country level factors which could be biasing the results. To account for the level of prosperity and the institutional environment an individual is embedded, in columns 2 to 4, we also control separately for country level measures for Log of GDP per capita in 2000, institutions and average schooling. In column 5, we account for all three of these country level factors in the same specification. Controlling for these features individually or together has little affect on the coefficient of interest. As a placebo test, in column 6, we run the same specification as column 5 for our non-colonial sample resulting in a similar outcome as table 2, in that, there is a reversal in the sign of the point estimates and, in some cases, a statistically significant negative relationship between historical institutions and racism. We also check the robustness of our results to alternative estimation methods. Using OLS with robust standard errors clustered by country and a multilevel-logit model produce nearly identical outcomes as table 8. To further control for other potential omitted country level factors, we reproduce the regressions from tables 3 to 5 at the individual level while controlling for the same country level characteristics. The outcomes of these regressions produce consistent results compared to their country level counterparts. Both the alternative estimation methods and additional control tables are shown in the appendix.

5.3 Examining Individuals Who Have Immigrated to Europe

Our last test to determine whether racism is an internal norm is to examine individuals who are from former European colonies and have immigrated to a new environment, specifically Europe. The logic behind this analysis is if racism is indeed an internal norm and not a result of one's present context, people will bring such an attitude with them to a new environment. To test this, using data from the European Social Survey, we examine, at the individual level, if our proxies for historical institutions from a person's origin country predict their level of racism even after they have immigrated to Europe. To capture an individuals level of racism, we use four different measures which are generally taken from a set of rotating questions asked in the first (2002) and seventh (2014) waves of the European Social Survey. We do not examine questions with regard to race that do not

Table 8: Multi-level Analysis

	1	2	3	4	5	6
Panel A						
	Dependent Variable: Racism					
	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Non-Colonial Sample
log population density, 1500	0.034***	0.039***	0.031***	0.037***	0.034***	0.006
	(0.008)	(0.014)	(0.011)	(0.012)	(0.012)	(0.011)
Observations	101,346	101,346	101,346	93,869	93,869	50,694
Number of groups/clusters	36	36	36	33	33	20
Panel B						
	Dependent Variable: Racism					
	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Non-Colonial Sample
Technology Index, 1500 CE	0.275***	0.263***	0.238***	0.255***	0.300***	-0.488**
	(0.063)	(0.066)	(0.060)	(0.069)	(0.053)	(0.227)
Observations	101,346	101,346	101,346	93,869	93,869	50,694
Number of groups/clusters	36	36	36	33	33	20
Specifications						
Indiviudal Controls	Yes	Yes	Yes	Yes	Yes	Yes
Control Log GDP Per Cap	No	Yes	No	No	Yes	Yes
Control Insitituions	No	No	Yes	No	Yes	Yes
Control Avg Schooling	No	No	No	Yes	Yes	Yes
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes : All regressions contain a constant. The unit of observation is the individual. All coefficients are reported in each column separated by panels. Individual level controls include: confidence in the government, income, level of education, life satisfaction, subjective health, a dummy for sex and age. Our dependent variables of interest are measures at the country level. Other controls are at the country level, which include: institutions, measured by the average of the world governance indicators index in 1996, log of GDP per capita in 2000 and average schooling from 1985-1995. Additionally, to account for time, we use wave fixed effects. Robust standard errors clustered by country are in parentheses
*** p<0.01, ** p<0.05, * p<0.1

appear on both these waves. The first measure is the response to the question, *"To what extent do you think your country should allow people of a different race or ethnic group from most people?"*. The answers are on a scale from 1 to 4 with 1 corresponding to allowing many into the country and 4 indicating allowing none, we refer to this variable as, race immigration. The second variable is in response to the question, *"Thinking of people who have come to live in your country from another country who are of a different race or ethnic group from most people. How much would you mind or not mind if someone like this was appointed as your boss"*. The response is on a scale from 0 to 10 with 0 indicating do not mind at all and 10 indicating mind a lot. We refer to this feature as, race boss. The third measure is derived from the question, *"Now thinking of people who have come to live in your country from another country who are of a different race or ethnic group from most people. How much would you mind or not mind if someone like this married a close relative of yours"*. The variable is also on a scale from 0 to 10 and has the same responses as race boss. We call this variable, race marriage. The final variable is in response to the question, *"How good or bad is it for a country to have a law against racial or ethnic discrimination in the workplace?"*. The answers are on a scale from 0 to 10 with 0 being extremely bad and 10 extremely good. We refer to this feature as laws against discrimination. Given these questions do not refer to a specific race, only those who are not the majority race or ethnicity, similar to the WVS survey question, it provides us the flexibility to examine views on race from individuals in a variety of countries and cultures without being bogged down by exactly what race they identify with or how they feel about certain races.

We control for a number of individual level controls included in all specifications which are: years of education, life satisfaction, feelings towards household income, gender, age, health, dummies for religious denomination, trust in the legal system, how long one has lived in the country and the number of people of minority race and ethnicity in their current living area. Controlling for trust in the government is important for identical reasons as the previous section. We account for views on household income because economic insecurity has been shown to be a driving factor of higher levels of racial intolerance and since immigrants from specific countries could be more economically insecure and thus, more racist (Johnson and Lordan 2016). Religion dummies are utilized to account for the role different religious denominations may have in shaping racism (Guiso et al 2003). We control number of people from minority races or ethnic groups in the current living area for two reasons. First, it is possible people who have more racist views self-select into more homogeneous neighbourhoods and second, the fact someone lives in a racially heterogeneous or homogeneous area could increase or reduce their level of racism through contact and socialization with other groups. Finally, we account for the how long someone has lived in the country to ensure that the connection between racism and the historical institutions of their origin country does not dissipate the longer an individual has lived in the country.

Table 9: Immigrants to Europe ESS

	1	2	3	4	5	6	7	8
Panel A								
	Colonial Origin Sample				Non-Colonial Origin Sample			
	Race Boss	Race Marriage	Laws Discrimination	Race Immigration	Race Boss	Race Marriage	Laws Discrimination	Race Immigration
log population density, 1500	0.168***	0.159***	-0.143***	0.024**	-0.059	-0.012	0.099*	-0.036***
	(0.042)	(0.037)	(0.026)	(0.011)	(0.043)	(0.055)	(0.051)	(0.011)
Observations	1,241	1,252	1,248	1,238	2,940	2,943	3,055	3,064
R^2	0.180	0.328	0.089	0.198	0.148	0.205	0.087	0.175
Panel B								
	Colonial Origin Sample				Non-Colonial Origin Sample			
	Race Boss	Race Marriage	Laws Discrimination	Race Immigration	Race Boss	Race Marriage	Laws Discrimination	Race Immigration
Technology Index, 1500 CE	1.329***	1.645***	-.774**	0.245**	-0.739	-1.757*	-0.635	-0.405
	(0.405)	(0.323)	(0.246)	(0.107)	(0.705)	(1.009)	(0.574)	(0.274)
Observations	1,106	1,116	1,113	1,106	1,940	1,941	2,027	2,034
R^2	0.182	0.336	0.080	0.197	0.161	0.205	0.205	0.189
Specifications								
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: All regressions contain a constant. The unit of observations is the individual. All coefficients are reported in each column separated by panels. Controls include: years education, life satisfaction, feelings towards household income, dummy for gender, age, health, 8 dummies for religious denomination, trust in legal system, years living in country and people of minority race and ethnicity in current living area. We restrict our analysis to countries that in general have at least 15 observations for all the specifications. Additionally, we only examine people who do not identify as being part of a minority race or ethnic group. Robust standard errors clustered by country are in parentheses . *** p<0.01, ** p<0.05, * p<0.1

In table 9, we examine the relationship between racism and an individual's ancestral historical institutions at the individual level using OLS with country fixed effects. We use country fixed effects to account for the institutional and cultural environment in which an individual has immigrated and to control for potential selection bias. It is possible immigrants coming from different countries will choose to migrate to alternative locations, thus using county fixed effects should account for this possibility (Alesina and Giuliano 2010).

The results of table 9 indicate, for those individuals from a post-colonial European nation, worse historical institutions from their birth country have a statistically significant relationship with higher levels of racism across all measures even when accounting for individual and country of destination characteristics. All coefficients display a statistically significant correlation with both measures for historical institutions at least at the 5 percent level. When testing the same relationship for people from a non-colonial society, we find, consistent with our previous results, the opposite and a generally weaker relationship in almost all cases. These outcomes support the validity of our previous findings that historical institutions shape racism through internal norms, beliefs and values and supports the notion that our identification strategy is capturing the reversal of fortune for post-European colonies.

In table 10, we control for modern economic prosperity, institutional quality and education levels of an individual's country of origin across different specifications. As we have shown in section 4.2, economic prosperity is correlated with lower levels of racism, thus, it is feasible, if racist individuals are more likely to immigrate from poorer societies and since worse historical institutions predict lower economic prosperity, we could be capturing the relationship between economic prosperity of the country of origin and racism, not historical institutions and racism (Alesina and Giuliano 2010). When accounting for log of GDP per capita, in all specifications, the results remain relatively unchanged in terms of the coefficient size, sign and statistical significance. For a similar reason as economic prosperity, current institutions could be an omitted variable and thus we also control for institutional quality of an individual's origin country. When additionally accounting for origin country institutions, columns 2,3,5,6,8,9,10 and 12, historical institutions continue to predict that individuals will mind to a greater degree if people who are a different race or ethnicity as the majority is their boss, if they marry a relative and less individuals from a different race or ethnic group should be let into the country independent of adjusting for origin country institutions. A person's views on laws against discrimination and its connection to historical institutions is dependent on the proxy used. When historically worse institutions are proxied by log of population density in the 1500s, they are associated with an increased likelihood an individual will think such laws are bad for the country which is significant at the 1 percent level but when institutions are measured by technology in the 1500s, while having the same sign as log of population density, it is no longer significant.

Another important omitted variable related to our outcomes of interest is unobserved human capital. Though we adjust for an individual's level of education, it is possible that our results are driven by a lower level of human capital in the country of origin. When checking the robustness of our results while adjusting for human capital of an individual's origin country, columns 3,6,9 and 12, the outcomes remain consistent compared the previous respective columns.

The outcomes of table 10 provide some evidence that the effect of historical institutions may have a different channel depending on the specific question asked as they could be capturing different aspects of racist or discriminatory beliefs. For example, questions about races with regard to being one's boss, marrying a relative or the number of immigrants that should be allowed into the country are always significantly correlated with historical institutions. However, this is not always the case for views on laws against discrimination. While the purpose of this paper is to establish a connection between historical institutions and racism, which is supported by these results, such findings open the door for a deeper exploration of racism as different aspects of it may be historically rooted while others are shaped to a greater degree by modern phenomenon. This further exploration is outside the scope of the paper.

One potential factor that could be biasing our results is the presence of large number of individuals from a single origin country. When exploring this possibility, we find there are a large number of people from Morocco (around 160) and the United States (around 51) in our baseline specifications from table 9. To account for this potential issue, we re-run our regressions from table 9 while removing individuals from Morocco and USA in table 10. When excluding the sub-sample of Morocco and the United States, we see consistent results compared to table 9.

As an additional robustness check, we examine if the historical institutions of an persons father and mothers' origin country predicts their level of racism. Table 11 reports the outcomes using nearly the same specification as table 9[16] with columns 1 to 4 displaying the results for the fathers side, 5 to 8 the mothers side and 9 to 12 when both the father and mother have the same country of origin. Overall, we see consistent results compared to table 9, meaning extractive historical institutions continue to predict higher levels of racism. There are two exceptions to this outcome seen in column 4 panel A and column 12 panel B as the coefficients are no longer statistically significant though they display the same sign. The analysis from table 11 provides further support for the long term impact of historically extractive institutions and the existence of the inter-generational transmission of racist attitudes.

[16]We do not control for how long someone has lived in the country because second generation immigrants are included in our sample of analysis and for them this question is not asked or applicable.

Table 10: Immigrants to Europe ESS Dropping Morocco and USA

	1	2	3	4	5	6	7	8
Panel A								
	Dropping Morocco				Dropping USA			
	Race Boss	Race Marriage	Laws Discrimination	Race Immigration	Race Boss	Race Marriage	Laws Discrimination	Race Immigration
log population density, 1500	0.155***	0.150***	-0.127***	0.022**	.184***	.217***	-0.131***	-0.027**
	(0.039)	(0.038)	(0.032)	(0.010)	(0.039)	(0.042)	(0.035)	(0.012)
Observations	1,028	1,040	1,048	1,031	1,163	1,173	1,169	1,158
R^2	0.168	0.299	0.100	0.180	0.187	0.327	0.082	0.207
Panel B								
	Dropping Morocco				Dropping USA			
	Race Boss	Race Marriage	Laws Discrimination	Race Immigration	Race Boss	Race Marriage	Laws Discrimination	Race Immigration
Technology Index, 1500 CE	1.413***	1.874***	-0.662**	0.246**	1.326***	1.872***	-0.570*	0.271**
	(0.404)	(0.299)	(0.295)	(0.103)	(0.394)	(.345)	(0.306)	(0.097)
Observations	893	904	913	899	1,028	1,037	1,034	1,026
R^2	0.175	0.316	0.093	0.180	0.190	0.355	0.074	0.207
Specifications								
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: All regressions contain a constant. The unit of observations is the individual. All coefficients are reported in each column separated by panels. Controls include: years education, life satisfaction, feelings towards household income, dummy for gender, age, health, 8 dummies for religious denomination, trust in legal system, years living in country and people of minority race and ethnicity in current living area. Robust standard errors clustered by country are in parentheses . *** p<0.01, ** p<0.05, * p<0.1

Table 11: Immigrants to Europe Using Father and Mother Origin Country ESS

	1	2	3	4	5	6	7	8	9	10	11	12
Panel A												
	Fathers Side				Mothers Side				Fathers and Mother same country			
	Race Boss	Race Marriage	Laws Discrimination	Race Immigration	Race Boss	Race Marriage	Laws Discrimination	Race Immigration	Race Boss	Race Marriage	Laws Discrimination	Race Immigration
log population density, 1500	0.145**	0.223***	-0.118***	0.025	0.114**	0.176***	-0.151***	0.048***	0.166***	0.229***	-0.139**	0.039*
	(0.064)	(0.043)	(0.025)	(0.023)	(0.039)	(0.036)	(0.049)	(0.014)	(0.045)	(0.050)	(0.051)	(0.018)
Observations	1,093	1,093	1,088	1,094	1,078	1,078	1,074	1,078	852	851	848	849
R^2	0.196	0.361	0.073	0.241	0.193	0.351	0.067	0.236	0.198	0.358	0.073	0.263
Panel B												
	Fathers Side				Mothers Side				Fathers and Mother same country			
	Race Boss	Race Marriage	Laws Discrimination	Race Immigration	Race Boss	Race Marriage	Laws Discrimination	Race Immigration	Race Boss	Race Marriage	Laws Discrimination	Race Immigration
Technology 1500 CE	1.777***	2.429***	-0.585***	0.255*	1.072***	1.628***	-1.003**	0.355***	1.554***	2.247***	-0.847**	0.256
	(0.400)	(0.238)	(0.187)	(0.132)	(0.356)	(0.452)	(0.383)	(0.096)	(0.432)	(0.391)	(0.381)	(0.175)
Observations	1,003	1,003	998	1,006	993	993	989	995	774	773	770	773
R^2	0.201	0.360	0.067	0.242	0.194	0.348	0.064	0.237	0.203	0.353	0.071	0.264
Specifications												
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: All regressions contain a constant. The unit of observations is the individual. All coefficients are reported in each column separated by panels. Controls include: years education, life satisfaction, feelings towards household income, dummy for gender, age, health, 8 dummies for religious denomination, trust in legal system and ethnicity in current living area. Robust standard errors clustered by country are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

6 Conclusion

In our study, we show, first, there is a reversal of fortune in the countries composing our sample of former European colonies and that this reversal does not occur in non-colonies. Following the literature, we claim this is a consequence of the establishment of extractive institutions which were exogenously determined. We use this phenomenon as an identification strategy to show that former colonies with more extractive institutions exhibit higher levels of racism today. We argue this could be caused by both a deliberate instillation of racism in the population of extractive colonies, and/or that extractive institutions created an environment conducive for the endogenous formation of lower levels of racism vis-a-vis former colonies that had more inclusive institutions. We then show that this relationship is robust to controlling for several potential confounding factors. Finally, we examine the mechanism for how historically extractive institutions shape levels of racism using three different strategies. The results of analysis indicate the effect of historically extractive institutions on modern levels of racism mainly operates through the persistence of racism as an internal belief, value and norm.

Our results go beyond the identification of one of the determinants of racism and contribute to the literature in several other ways. First, we show that the impact of colonial institutions not only affects modern institutional quality but also left an imprint on cultural values which persists until today. Second, the paper contributes to the understanding of how racism persists across time by identifying that it is an internal norm, belief and value. Linking this result with the recent findings in the literature on the negative economic and political impact of racist attitudes, we can claim that the persistence of racism might be one factor contributing to the persistence of extractive institutions across time, an outcome which has been shown to have consequences on economic development. Our results also support the hypothesis that abrupt changes of institutions might dramatically alter cultural values in ways that are not easily reversed. This research opens new avenues of study investigating of the impact of extractive colonial institutions on other cultural values beyond racism. Finally, there is room for further research expanding on our current findings with a deeper exploration in to what aspects of institutions lead to more racism and how this mechanism operates. This will likely require micro level studies to provide the required contextual detail.

Data Appendix Country Level

Racism: The question in the survey is: "On this list are various groups of people. Could you please mention any that you would not like to have as neighbors?" Answer is coded (1) if people of a different race is mentioned and 0 if not. For the country level, the variable is averaged by country. Source: World Value Surveys.

Ancestry Adjusted variables: Ancestry adjusted covers population density, millennia of agriculture, state history, and technology. The measures are migration weighted measures for the period 1500 to 2000 CE. Source: Putterman and Weil (2010) via Chanda, Cook, and Putterman (2014).

Colonial Origin: Colonizer dummies are for the identity of the European colonizer country which include British, French, German, Spanish, Italian, Belgian, Dutch, and Portuguese. Source: La Porta (1999)

Control: Derived from the question "Some people feel they have completely free choice over their lives, while other people feel that what they do has no real effect on what happens to them". Please use this scale where (1) means "no choice at all" and (10) means "a great deal of choice" to indicate how much freedom of choice and control you feel you have over the way your life turns out. The measure is averaged by country over all available waves. Source: World Value Surveys.

Economic Freedom: Measure for the degree of economic freedom with in a society. The measures encompasses 5 sub-components which are the size of government, legal structure and security of property rights, access to sound money, Freedom to trade internationally and Regulation of credit, labor and business. The variable is averaged over all years available. Source: Gwartney and Joshua (2011)

Fractionalization: Measures for ethnic linguistic and religious fractionalization are taken from Alesina et al. (2003)

Genetic Diversity and Ancestry Adjusted Genetic Diversity: Measures capture the migration adjusted and unadjusted levels of predicted genetic diversity on the modern country level. Source: Ashraf and Galor (2013).

Latitude: Absolute value of latitude scaled between zero and one. Source: La Porta (1999).

Legal Origin: Dummy variables that indicate the legal tradition of a country which includes British, French, German or Scandinavian. Source: La Porta (1999)

Log of GDP per capita in 2000 CE: log of real GDP per capita, in constant 2000 international dollars, as reported by the Penn World Table, version 6.2 taken via Ashraf and Galor (2013)

Log of GDP per capita: log of GDP per capita in constant 2005 US dollars averaged over the period 1984-2013. Source: World Bank Development Indicators

Millennia of Agriculture: The quantity of millennia a country has utilized agriculture until 2000 CE. Source: Putterman and Trainor (2006) via Chanda, Cook, and Putterman (2014).

Obedience: Derived from the question "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important?" If obedience is mentioned, it is coded as (1), if not mentioned (0). The measure is averaged by country over all available waves. Source: World Value Surveys.

Population Density in 1500 and 1000: Total population in relation to arable land in 1500 and 1000 CE. Source: McEvedy and Jones (1978) via Acemoglu, Johnson, and Robinson (2002)

Regional Dummies: Latin America, Europe and Central Asia, South Asia, SubSaharan Africa, East Asia and the Pacific and Western Europe. Source: World Bank .

Religion: Religion measures the percent of a country in which the population identifies with a specific religion which includes Roman Catholic, Protestant, Muslim, and Other in 1980. Source: La Porta (1999)

Respect: Derived from the question "here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important?" If tolerance and respect for other people is mentioned, it is coded as (1,) if not mentioned (0). The measure is averaged by country over all available waves. Source: World Value Surveys.

Rule of Law: Our proxy for legal institutions is the rule of law. This measure captures the level of confidence agents have in and abide by the rules of society. Specially, the quality of contract enforcement, property rights, the police, the courts and finally, the probability of crime and violence. The measure is averaged over the years 1996-2013: Source Kaufmann, Kraay, and Mastruzzi (2013)

Share of European 1900s: Percentage of settlers of European decent 1900s.

Source: Acemoglu, Johnson, and Robinson (2002)

Share of indigenous population decent 1500: Share of people in the population who are of indigenous decent from 1500 CE. Source: Putterman and Weil (2010).

State History in 1500 CE: An index of state antiquity for the period 1 CE to 1500 CE. Source : Putterman (2007) via Chanda, Cook, and Putterman (2014).

Technology in 0 AD, 1500 and 2000 CE: These measures, though they are constructed differently, capture the level of technology in a country around the year 0, 1500 and 2000 respectively. Source: for technology in 1500 was taken from Comin, Easterly, and Gong (2010) via Chanda, Cook, and Putterman (2014) . Current technology and technology in 0 AD was taken directly from Comin, Easterly, and Gong (2010)

Trust: Derived from the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" Answer is coded (1) if people can be trusted and (0) if you cannot be too careful. The measure is averaged by country over all available waves. Source: World Value Surveys.

World Governance Indicators 1996 average: The average of all world governance indicators for 1996. It captures voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. Source: Kaufmann, Kraay, and Mastruzzi (2013).

Years of Schooling, Average 1985 to 1995: The country-level average years of schooling for the population above 15 years of age over the period 1985 to 1995. Source: Barro and Lee (2010).

Data Appendix WVS Individual Level

Racism: The question in the survey is : "On this list are various groups of people. Could you please mention any that you would not like to have as neighbors?" Answer is coded (1) if People of a different race is mentioned and 0 if not.

Education: The question in the survey is: What is the highest educational level that you have attained? (1) Inadequately completed elementary education, (2) Completed (compulsory) elementary education, (3) Incomplete secondary school: technical/vocational type, (4) Complete secondary school: technical/vocational type, (5) Incomplete secondary: university-preparatory, (6) Complete secondary: university-preparatory, (7) Some university without degree/higher education, (8) University with degree/higher education.

Income: A scale of incomes in which the household falls into, before taxes and other deductions. This variable takes values from 1 to 10, 1 being the lowest decile and 10 the highest. The data is recollected in local currency, scaled and then aggregated so the deciles represent a country level income ranking.

Life Satisfaction:The question in the survey is : All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied' and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole? Source : World Value Surveys.

Age and Gender: Respondent's age. Gender of the respondent. (0) Female and (1) Male

Health: Respondent's Subjective health. This variable takes values from 1 to 5, 1 being very good health and 5 being very poor.

Confidence Government: Respondent's Confidence in the Government. This variable takes values from 1 to 4, 1 a great deal of confidence and 4 being non at all.

Data Appendix ESS Individual Level

Race Boss: Response to the question, thinking of people who have come to live in your country from another country who are of a different race or ethnic group from most people. How much would you mind or not mind if someone like this was appointed as your boss. The response is on a scale from 0 to 10 with 0 indicating, do not mind at all and 10 indicating mind a lot.

Race Marriage: Response to the question, thinking of people who have come to live in your country from another country who are of a different race or ethnic group from most people. How much would you mind or not mind if someone like this married a close relative of yours. The response is on a scale from 0 to 10 with 0 indicating, do not mind at all and 10 indicating mind a lot.

Race Immigrant: Response to the question,to what extent do you think your country should allow people of a different race or ethnic group from most people? The answers are on a scale from 1 to 4 with 1 corresponding to allowing many into the country and 4 indicating allowing none.

Laws Discrimination: Response to the question, how good or bad is it for a country to have a law against racial or ethnic discrimination in the workplace? The answers are on a scale from 0 to 10 with 0 being extremely bad and 10 extremely good.

Immigrants Same Race: Response to the question,to what extent do you think your country should allow people of the same race or ethnic group from most people? The answers are on a scale from 1 to 4 with 1 corresponding to allowing many into the country and 4 indicating allowing none.

Education: Years of full-time education completed.

Feelings Income: Feeling about household's income nowadays. This variable takes values from 1 to 4, 1 being living comfortably on present income and 4 very difficult living on present income.

Trust Legal System: Respondent's trust in the legal system. This variable takes values from 0 to 10, 0 being non at all and 10 complete trust.

Age and Gender: Respondent's age. Gender of the respondent. (2) Female and (1) Male

Life Satisfaction: Respondents life satisfaction. This variable takes values

from 0 to 10, 0 being extremely dissatisfied and 10 extremely satisfied.

Living Minorities: If people of a minority race/ethnic group are in the respondents current living area. This variable takes values from 1 to 3, 1 almost no one and 3 many.

Religious Denomination : Fixed effects for religious denomination. Includes: Roman Catholic, Protestant, Eastern Orthodox, Other Christian denomination, Jewish, Islamic, Eastern religions and Other non-Christian religions.

Lived in Country: Years lived in the county. Includes : with last year, 1 to 5 years, 6 to 10 years, 11 to 20 years and more than 20 years.

Appendix Figures and Tables

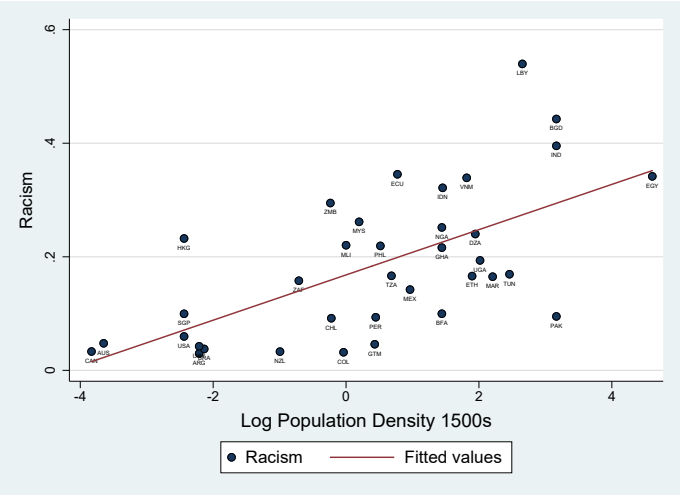

Figure 1: Scatter Plot Racism and Log of Population Density 1500s Colonial Sample

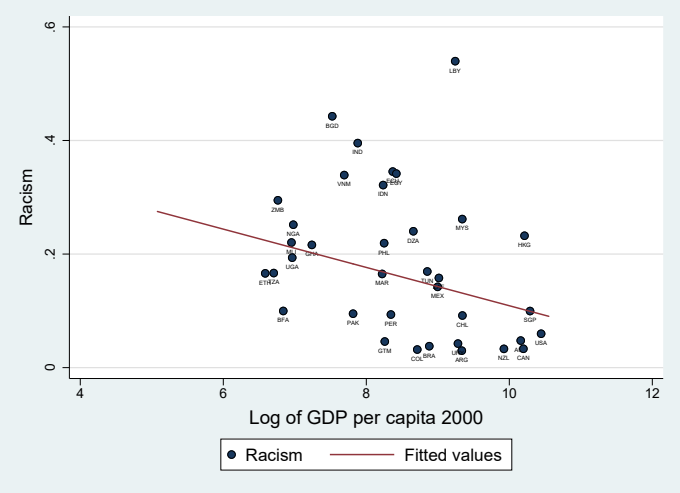

Figure 2: Scatter Plot Racism and Log of GDP Per Capita Colonial Sample

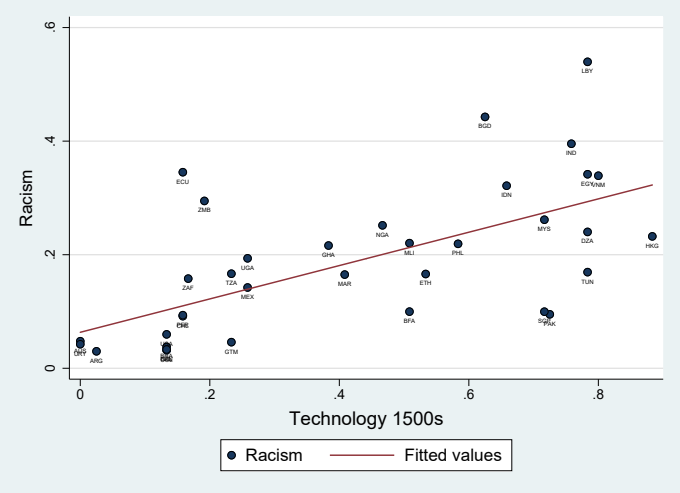

Figure 3: Scatter Plot Racism and Technology Index 1500s Colonial Sample

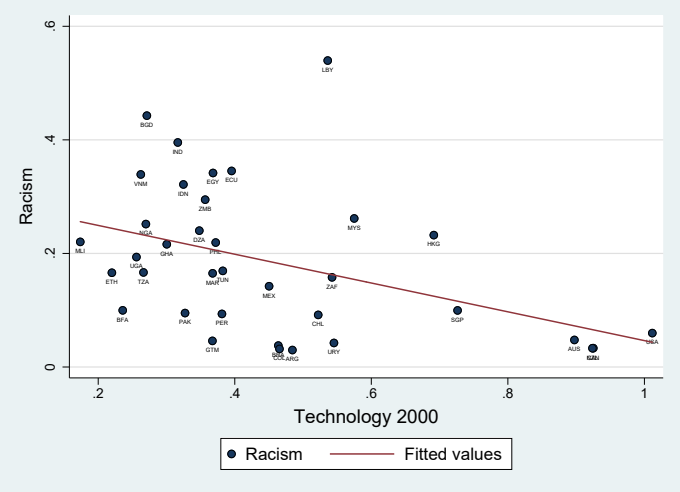

Figure 4: Scatter Plot Racism and Modern Technology Colonial Sample

Appendix 1 : Samples for Cross Country and Multi-Level Analysis

Colonial Sample	Non-Colonial Sample
Argentina	Bosnia and Herzegovina
Australia	China
Algeria	Czech Republic
Bangladesh	Finland
Brazil	France
Burkina Faso	Germany
Canada	Hungary
Chile	Iran
Colombia	Iraq
Ecuador	Italy
Egypt	Japan
Ethiopia	Lithuania
Ghana	Netherlands
Guatemala	Norway
Hong Kong, China	Poland
India	Romania
Indonesia	Saudi Arabia
Libya	Spain
Malaysia	Sweden
Mali	Switzerland
Mexico	Thailand
Morocco	Turkey
New Zealand	Uganda
Nigeria	Ukraine
Pakistan	Uzbekistan
Peru	
Philippines	
Singapore	
South Africa	
Tanzania	
Tunisia	
Uganda	
United States	
Uruguay	
Vietnam	
Zambia	

Appendix Table 2 : Summary Stats Country Level

Variable	Obs	Mean	Std. Dev.	Min	Max
Racism	60	0.177	0.116	0.024	0.540
Log Population Density 1500s	60	1.195	2.064	-3.831	5.643
Technology Index 1500s	60	0.575	0.305	0.000	1.000
Log GDP Per Capita in 2000	60	8.807	1.102	6.587	10.445
Technology Index 2000	60	0.508	0.220	0.174	1.012
Log of GDP Per Capita	60	8.298	1.597	5.079	10.933
Rule of Law	60	0.185	1.013	-1.649	1.941
World Governance Indicators 1996	60	0.173	0.972	-1.806	1.836
Average Years of Schooling 1985-1995	55	6.861	2.658	0.902	12.319

Appendix Table 3 : Sum Stats Individual Level WVS

Variable	Obs	Mean	Std. Dev.	Min	Max
Racism	220,605	0.169	0.375	0.000	1.000
Log Population Density 1500s	220,604	0.930	2.148	-3.831	5.643
Technology Index 1500s	220,605	0.521	0.322	0.000	1.000
Satisfaction	218,190	6.834	2.376	1.000	10.000
income	197,452	4.619	2.345	1.000	10.000
education	189,566	4.606	2.223	1.000	8.000
age	219,001	40.345	16.121	13.000	99.000
sex	215,970	0.491	0.500	0.000	1.000
Health	218,174	2.12876	0.872367	1	5
Lack of Confidence Government	192,162	5.411137	2.887504	1	10

Appendix Table 4 : First Stage IVs from Table 6

	(1)	(2)	(3)	(4)
Dependent Variables	Log Population Density 1500s		Technology Index 1500s	
	Column 5 Panel A	Column 6 Panel A	Column 5 Panel B	Column 6 Panel B
Millennial of Agr	0.236***		0.168***	
	(0.075)		(0.056)	
State History	1.252*		1.402***	
	(0.623)		(0.408)	
Technology 0 CE		1.293***		1.641***
		(0.436)		(0.472)
Log Pop 1000 CE		0.415***		0.095
		(0.070)		(0.081)
Absolute Latitude	-1.380	0.788	-0.681	0.387
	(0.940)	(0.694)	(0.606)	(0.810)
Observations	35	32	35	32
R^2	0.503	0.848	0.629	0.519

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 5 : Replication Table 8 Multi-level Logit

	1	2	3	4	5	6
Panel A						
	Dependent Variable: Racism					
Samples	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Non-Colonial Sample
log population density, 1500	0.291***	0.296***	0.272***	0.285***	0.279***	0.014
	(0.059)	(0.089)	(0.095)	(0.097)	(0.106)	(0.103)
Observations	101,346	101,346	101,346	93,869	93,869	50,694
Number of groups/clusters	36	36	36	33	33	20
Panel B						
	Dependent Variable: Racism					
Samples	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Non-Colonial Sample
Technology Index, 1500 CE	2.384***	2.229***	2.065***	2.116***	2.598***	-3.970**
	(0.432)	(0.418)	(0.435)	(0.480)	(0.404)	(1.584)
Observations	101,346	101,346	101,346	93,869	93,869	50,694
Number of groups/clusters	36	36	36	33	33	20
Specifications						
Indiviudal Controls	Yes	Yes	Yes	Yes	Yes	Yes
Control Log GDP Per Cap	No	Yes	No	No	Yes	Yes
Control Insitituions	No	No	Yes	No	Yes	Yes
Control Avg Schooling	No	No	No	Yes	Yes	Yes
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes : All regressions contain a constant. The unit of observation is the individual. All coefficients are reported in each column separated by panels. Individual level controls include: confidence in the government, income, level of education, life satisfaction, subjective health, a dummy for sex and age. Our dependent variables of interest are measures at the country level. Other controls are at the country level, which include: institutions, measured by the average of the world governance indicators index in 1996, log of GDP per capita in 2000 and average schooling from 1985-1995. Additionally, to account for time, we use wave fixed effects. Robust standard errors clustered by country are in parentheses
*** p<.01, ** p<0.05, * p<0.1

Appendix Table 6 : Reproduction Table 8 OLS with clustered standard errors by country

	1	2	3	4	5	6
Panel A						
	Dependent Variable: Racism					
Samples	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Non-Colonial Sample
log population density, 1500	0.041***	0.045***	0.043***	0.041***	0.044***	0.009
	(0.007)	(0.012)	(0.011)	(0.010)	(0.012)	(0.015)
Observations	101,346	101,346	101,346	93,869	93,869	50,694
R^2	0.067	0.067	0.067	0.071	0.072	0.054
Number of groups/clusters	36	36	36	33	33	20
Panel B						
	Dependent Variable: Racism					
Samples	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Colonial Sample	Non-Colonial Sample
Technology Index, 1500 CE	0.330***	0.299***	0.291***	0.290***	0.313***	-0.692***
	(0.056)	(0.058)	(0.056)	(0.058)	(0.056)	(0.201)
Observations	101,346	101,346	101,346	93,869	93,869	50,694
R^2	0.074	0.078	0.079	0.082	0.086	0.068
Number of groups/clusters	36	36	36	33	33	20
Specifications						
Indiviudal Controls	Yes	Yes	Yes	Yes	Yes	Yes
Control Log GDP Per Cap	No	Yes	No	No	Yes	Yes
Control Insitituions	No	No	Yes	No	Yes	Yes
Control Avg Schooling	No	No	No	Yes	Yes	Yes
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes : All regressions contain a constant. The unit of observation is the individual. All coefficients are reported in each column separated by panels. Individual level controls include: confidence in the government, income, level of education, life satisfaction, subjective health, a dummy for sex and age. Our dependent variables of interest are measures at the country level. Other controls are at the country level, which include: institutions, measured by the average of the world governance indicators index in 1996, log of GDP per capita in 2000 and average schooling from 1985-1995. Additionally, to account for time, we use wave fixed effects. Robust standard errors clustered by country are in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix 7 : Controlling for Fractionalization, Migration and Genetic Diversity at the Individual Level

	1	2	3	4	5	6
Panel A						
	Dependent Variable: Racism					
Control Variables	Ethnic Frac	Lingustic Frac	Religious Frac	Migration Ratio	Genetic Diversity	AA Gentic Diversity
log population density, 1500	0.032***	0.033***	0.030***	0.037***	0.025**	0.037***
	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)	(0.011)
Observations	98,929	98,929	98,929	101,346	101,346	86,405
Number of Groups	35	35	35	36	36	30
Panel B						
	Dependent Variable: Racism					
Control Variables	Ethnic Frac	Lingustic Frac	Religious Frac	Migration Ratio	Genetic Diversity	AA Gentic Diversity
Technology Index, 1500 CE	0.277***	0.266***	0.245***	0.264***	0.233***	0.302***
	(0.076)	(0.069)	(0.069)	(0.064)	(0.075)	(0.080)
Observations	98,929	98,929	98,929	101,346	101,346	86,405
Number of Groups	35	35	35	36	36	30
Specifications						
Indiviudal Controls	Yes	Yes	Yes	Yes	Yes	Yes
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes : All regressions contain a constant. The unit of observation is the individual. All coefficients are reported in each column separated by panels. Individual level controls include: confidence in the government, income, level of education, life satisfaction, subjective health, a dummy for sex and age. Our dependent variables of interest are measures at the country level. Other controls are at the country level which includes controls for absolute latitude in specifications. Additionally, to account for time, we use wave fixed effects. Robust standard errors clustered by country are in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 8 : Controlling for Religion, Colonial Origin, and Other Cultural Factors Individual Level

	1	2	3	4	5	6	7	8
Panel A								
	Dependent Variable: Racism							
Control Variables	Religion	Colonial Origin	Legal Origin	Regional Effects	Trust	Respect	Obedience	Control
log population density, 1500	0.026***	0.026***	0.033***	0.021**	0.032***	0.031***	0.032***	0.032***
	(0.007)	(0.008)	(0.009)	(0.010)	(0.009)	(0.009)	(0.009)	(0.009)
Observations	101,346	101,346	101,346	101,346	96,393	101,346	101,346	99,576
Number of Groups	36	36	36	36	36	36	36	36
Panel B								
	Dependent Variable: Racism							
Control Variables	Religion	Colonial Origin	Legal Origin	Regional Effects	Trust	Respect	Obedience	Control
Technology Index, 1500 CE	0.261***	0.239***	0.255***	0.160**	0.260***	0.260***	0.264***	0.264***
	(0.075)	(0.075)	(0.072)	(0.073)	(0.067)	(0.068)	(0.067)	(0.067)
Observations	101,346	101,346	101,346	101,346	96,393	101,346	101,346	101,346
Number of Groups	36	36	36	36	36	36	36	36
Specifications								
Indiviudal Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes : All regressions contain a constant. The unit of observation is the individual. All coefficients are reported in each column separated by panels. Individual level controls include: confidence in the government, income, level of education, life satisfaction, subjective health, a dummy for sex and age. Our dependent variables of interest are measures at the country level. Other controls are at the country level which includes controls for absolute latitude in specifications. Additionally, to account for time, we use wave fixed effects. In this case we do not restrict our sample to countries that have at least 15 observations. Robust standard errors clustered by country are in parentheses *** p<0.01, ** p<0.05, * p<0.1

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