

CULTURE AND THE HISTORICAL PROCESS

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ABSTRACT

This article discusses the importance of accounting for cultural values and beliefs when studying the process of historical economic development. A notion of culture as heuristics or rules of thumb that aid in decision making is described. Because cultural traits evolve based upon relative fitness, historical shocks can have persistent effects if they alter the costs and benefits of different traits. A number of empirical studies confirm that culture is an important mechanism that helps explain why historical shocks can have persistent impacts; these are reviewed here. As an example, I discuss the colonial origins hypothesis (Acemoglu, Johnson, and Robinson 2001), and show that our understanding of the transplantation of European legal and political institutions during the colonial period remains incomplete unless the values and beliefs brought by European settlers are taken into account. It is these cultural beliefs that formed the foundation of the initial institutions that in turn were key for long-term economic development.

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1 INTRODUCTION AND A DEFINITION OF CULTURE

Recent research has put forth statistical evidence showing that historical events can have long-term impacts that continue to be felt today (Nunn 2009). Increasingly, attention has turned to better understanding the specific mechanisms underlying historical persistence. Although a number of mechanisms have been considered, one mechanism which, in my view, has not yet received sufficient attention is culture. Perhaps one reason for this is that the concept is often batted around, without a precise definition, and therefore void of any concrete meaning.

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Therefore, at the outset, it is important to specify exactly what I mean by culture in this context.

The notion of culture that I employ is that of decision making heuristics or ‘rules of thumb’ that have evolved given our need to make decisions in complex and uncertain environments. Using theoretical models, Boyd and Richerson (1985 2005) show that if information acquisition is either costly or imperfect, the use of heuristics or rules of thumb in decision making can arise optimally. By relying on general beliefs, values or gut feelings about the “right” thing to do in different situations, individuals may not behave in a manner that is optimal in every instance, but they do save on the costs of obtaining the information necessary to always behave optimally. The benefit of these heuristics is that they are “fast-and-frugal,” a benefit which in many environments outweighs the costs of imprecision (Gigerenzer and Goldstein 1996). Therefore, culture, as defined in this paper, refers to these decision-making heuristics, which typically manifest themselves as values, beliefs, or social norms.

In the models of Boyd and Richerson (1985, 2005), different behavioral rules evolve through a process of natural selection determined by the relative payoffs of the different cultural traits. Although the adoption of the different cultural beliefs or rules of thumb does evolve based on relative costs and benefits, these processes are typically slow moving.²

Although decision-making heuristics may manifest themselves in a number of ways, they often take the form of emotions or gut feelings about what the “right” or “wrong” action is in a particular situation (Gigerenzer 2007). As we will see, these emotions may range from deeply-held beliefs about the extent to which others can be trusted, whether it is right to behave in an honest manner, whether women should work outside the home, whether it is important to punish those who have cheated on others in the community, the importance of hard work, etc.

The central role played by emotions in decision making is most famously illustrated by the experience of Phineas Gage, a 19th-century US railway construction foreman who suffered severe brain damage when an iron tamping rod was driven through his head, severely damaging his ventromedial prefrontal cortex (Damasio et al. 1994). In many ways, Gage made a full recovery. His ability to tackle logic and abstract problems and his memory was completely well-functioning. However, his ability to make decisions was severely compromised, as was his ability to process emotion.

This phenomenon has been similarly observed in other patients (Damasio et al. 1994, 1104). For example, Damasio (1994) details the case of a patient, Elliot, who also suffered damage to his ventromedial prefrontal cortex, but due to a brain tumor. Extensive testing showed that Elliot possessed all of the

2 One can also model the speed of cultural change. Boyd and Richerson (2005) show that, from one generation to the next, culture is less likely to change when the environment is more stable and learning more costly.

instruments of rationality and cognition typically viewed as important for decision making: reasoning skills, a working memory, ability to process factual knowledge, possession of social knowledge, etc. Elliot's only recognisable cognitive defect was a lack of emotion and feeling, which somehow caused his inability to make decisions. Pure reasoning, as demonstrated by the peculiar pathologies of Phineas, Elliot, and others like them, was not sufficient for decision making; emotion plays a key role.

The use of reason alone requires one to gather all relevant information, map actions to all possible outcomes, while accounting for different states of the world, how they impact outcomes, and the likelihood of each. Undertaking this task for all decisions in life can incapacitate the decision-maker, rendering him unable to make the simplest and most mundane decisions. Antonio Damasio famously describes the decision-making process of one of his patients trying to set up their next appointment:

I suggested two alternative dates, both in the coming month and just a few days apart from each other. The patient pulled out his appointment book and began consulting the calendar. The behavior that ensued, which was witnessed by several investigators, was remarkable. For the better part of a half hour, the patient enumerated reasons for and against each of the two dates: previous engagements, proximity to other engagements, possible meteorological conditions, virtually anything that one could reasonably think about concerning a simple date . . . He was now walking through a tiresome cost-benefit analysis, an endless outlining and fruitless comparison of options and possible consequences. (Damasio 1994, 193–4)

Gut-feelings or other short-cuts to decision making – e.g., choosing something because it “looks good” on the menu – can serve as a useful tool that saves on cognitive cost. Interestingly, evidence suggests that a significant part of decision-making heuristics may actually work at the subconscious level. The most well-known evidence for this is from the experiments of Bechara, Damasio, Tranel, and Damasio (1997), in which individuals are given a high-stakes gambling task where they were asked to choose cards from four decks. The cards were associated with a monetary value, either positive or negative (i.e., they could win or lose). Two of the four decks delivered average positive payoffs and two of the decks delivered average negative payoffs. The study found that very early, after about 10 cards, individuals developed a non-conscious adverse response to the losing decks, measured by anticipatory skin conductance, even though they had no conscious awareness of which decks were better. After about 50 cards, participants began to express a feeling or “hunch” about the nature of the decks, and by about 80 cards, participants were able to clearly articulate why they feel one set of decks was better. Interestingly, the authors found that when the same exercise was undertaken by individuals who had suffered ventromedial prefrontal cortex damage – of the same form as Phineas Gage and Elliot discussed above – none of them experienced a non-conscious response, and by the end of the experiment (after 100

card selections) this group had not learned to choose the winning decks more often than the losing decks.

Although we are far from a complete understanding of the exact mechanics underlying our reliance on emotions, gut-feelings, values, hunches, non-conscious cues, or other short-cuts to decision making, there is ample evidence that these short-cuts do exist and pivotally influence decision making (de Sousa 1987; Damasio 1994; Elster 1999; Gigerenzer 2007). It is these heuristics, which vary across individuals and societies, and are potentially shaped by history, that I refer to as culture and examine here.

In thinking about the sources of historical persistence, culture plays a potentially important role because it is a slow moving variable whose evolution can be affected by historical events. A number of existing studies provide evidence consistent with this possibility, showing that historical shocks have a long-term impact on the distribution of cultural traits today.³

In addition, culture is also potentially important because of its interaction with other factors that are themselves an important source of historical persistence. For example, a source of persistence, which has received a great deal of attention, is domestic institutions. A number of studies argue that through the formation and persistence of domestic institutions, colonialism had long-term impacts on much of the world outside of Europe (Engerman and Sokoloff 1997; La Porta et al. 1997; Acemoglu, Johnson, and Robinson 2001). However, what is less clearly recognised is that culture plays an important role even in our understanding of this channel of persistence. As discussed in Section 4, one cannot fully understand the historic transplantation of European institutions around the globe without recognising the important role played by culture, and the endogeneity of institutions to the values and beliefs of the first European migrants.

2 EVIDENCE FOR CULTURAL DIFFERENCES ACROSS SOCIETIES

A natural question when assessing the ability of culture to explain historical persistence is whether there is even evidence that culture exists. Empirical evidence for this takes the form of studies that show that different societies make systematically different decisions when faced with the same decision with exactly the same available actions and same payoffs. A natural interpretation of these systematic differences is that different decision-making heuristics evolved across societies due to the different environments or histories of the groups. (We discuss the evidence for these determinants in the following section.)

3 This evidence is summarised in Section 3.

In the studies, three types of empirical strategies have been employed. The first is to bring the same (artificial) environment to people of different backgrounds. This is the strategy undertaken, for example, in the studies by Henrich et al. (2001), Henrich et al. (2005), and Henrich et al. (2010), where the ultimatum game was conducted in remote small-scale societies across the world. A number of other studies also identify systematically different behavior across cultures in identical, artificially constructed settings. See for example, Nisbett and Cohen (1996), Jakiela (2009), and Jakiela (2011).

The second strategy is similar to the first, but undertakes analysis at a more “micro-level,” and through a variety of methods, tests for systematic differences in specific cognitive processes between individuals from different cultures. For example, in his book *The Geography of Thought*, Nisbett (2003) documents psychological differences (in the past and present) between individuals from Eastern cultures (China, Japan and South Korea) and those from Western cultures (Europe and the European offshoots). Nisbett (2003) shows that the cognitive mechanisms involved in decision making (i.e., the thought process) are systematically different across the two groups. While Westerners tend to reason in analytical and abstract ways, viewing objects in isolation from their environment, East Asians tend to reason in a holistic manner, understanding objects as being fundamentally connected with each other and their environment. Nosek et al. (2009), relying on implicit association tests, identify systematic variation across 34 countries in unconscious attitudes against women in science, and show that this gender bias strongly correlates with nation-wide male-to-female achievement gaps in 8th grade science and math scores.

The third strategy is to examine situations where individuals from different backgrounds have been brought into the same environment. Fisman and Miguel (2007) look for a culture of corruption using the accumulation of unpaid parking violations among foreign diplomats stationed in Manhattan. They find that individuals from more corrupt societies are more likely to accumulate unpaid parking violations. Fernandez and Fogli (2009) examine the behavior of American-born citizens with parents who were born outside of the US. They find that the labour force participation and fertility of second generation females are positively correlated with the historical labour force participation and fertility of the individual’s country of ancestry (i.e., parent’s country of birth).

Although using very different methodologies, the studies all provide evidence leading to the same general conclusion: individuals from different cultural backgrounds make systematically different decisions even when faced with the same decision in the same environment.

3 CULTURE AS A SOURCE OF HISTORICAL PERSISTENCE

The natural second step when assessing the importance of culture for historical persistence is to ask whether there is evidence that culture and its evolution can be

shaped by history.⁴ Conceptually, historical events could have persistent impacts if they alter the relative costs and benefits of different cultural traits, affecting their prevalence in a society. In turn, if cultural traits are transmitted vertically from parents to children, then the impacts will persist through time.

An example of vertical transmission can be seen by returning to cultural differences between Westerners and Asians: Asians tend to view the world as interconnected and dynamic while Westerners tend to view the world in more static terms and are more likely to conceptualize objects in isolation of their environment (Nisbett 2003). One reason for the persistence of these differences is that they arise through the (often unintended) socialisation of children by their parents. When playing with children, Western parents typically focus on objects (i.e., nouns) and tend to interact with the child by asking questions about the object and pointing out its attributes to their children. By contrast, Asians are more likely to focus on feelings, social relations, and to use toys as tools to teach lessons about interpersonal relations: “Here is a car. I give it to you. Now give it to me. Yes. Thank you” (Nisbett 2003, 150). One observable consequence of these differences is that Western children are able to learn nouns much more quickly than verbs. On the other hand, Asian children learn the two at approximately the same rate (Gentner 1982; Tardif 1996).

3.1 Evidence from historical US migration

Evidence that historical shocks can shape cultural evolution come from a variety of settings and disciplines. A number of studies examine historical migration episodes within the US and show that the identity of the early migrants was important for the subsequent development of a particular location. The most well known evidence for this comes from lab-based experiments from the field of psychology. Cohen et al. (1996) attempt to explain why today in the US South (but not the US North) there is a “culture of honour,” where particular importance is placed in defending one’s reputation and honour, even if this requires aggression and violence. Their explanation for why this culture exists in the South but not the North is rooted in the different histories of settlement in the two areas. The North was primarily settled by groups with a farming background, while the South was settled primarily by the Celts who had been herders since prehistoric times and had never engaged in large-scale agriculture. They argue that historically in herding cultures, characterised by low population densities and weak states, protection of one’s property was left to the individual. Therefore, a culture of aggressive behavior arose and continues to persist even today.

To test the culture of honour hypothesis, Cohen et al. (1996) conducted a series of experiments involving white males from the US North and US South. In

4 There is an extensive literature in psychology documenting cultural and cognitive differences between Westerners and East Asians. See chapter 8 of Heine 2012 for a summary.

the experiments, each individual was bumped by an accomplice and called an “asshole.” (The participants did not know this was part of the experiment.) Using a number of methods, including direct observation, psychological tests, and saliva samples, Cohen et al. compare the effects of this incident on Southerners relative to Northerners. They find the Southerners became more upset, were more likely to feel that their masculinity was threatened, became more physiologically and cognitively primed for aggression (measured by a rise in testosterone and cortisol levels), and were more likely to engage in aggressive behavior subsequently.

Recognising that the Cohen et al. (1996) experiments, in effect, only have two observations (those from the US North and those from the US South), Pauline Grosjean (2011) undertook a non-experimental study that examines variation across counties using historical US census data. The study finds that counties in the US South with more Scotch-Irish immigration prior to 1790 have higher homicide rates today. Interestingly, the relationship between the Scotch-Irish immigration and homicide only exists in the US South. This is potentially explained by the greater prevalence of lawlessness and weaker formal institutions in the South. These characteristics created an environment where the cultural traits remained beneficial and therefore persisted. In the North, with better-functioning formal institutions, a culture of honour was not beneficial and therefore the trait did not persist. Her findings suggest that historical persistence may depend on the interaction between culture and institutions. Culture persists in the certain institutional environments and not others. It is also important to recognise that the institutions that arose in the South vs. the North may have been endogenous to original cultural differences. This dynamic, which we discuss in section 4, creates the potential for interesting interactions between culture, institutions and historical persistence.

Another early study tracing differences today back to historical settlement in the US is Salaman’s (1980) comparison of two towns located in the same county in Eastern Illinois. Both towns were settled about 100 years ago, but one by German immigrants from East Frisia and the other by Irish immigrants. Using survey data, Salaman documents the persistence of norms relating to land inheritance, which reflect the ethnic heritage of the two communities.

3.2 Evidence from traditional farming practices

Like Cohen et al. (1996) and Grosjean (2011), Alesina, Giuliano, and Nunn (2011) also show that the form of traditional subsistence impacts the long-term evolution of culture. Rather than examining the distinction between herding and agricultural societies, Alesina et al. (2011) test for the cultural impacts of farming technology traditionally used by a society. Their analysis tests the well-known hypothesis, originally proposed by Boserup (1970), that the use of the plough, which requires significant upper body strength relative to other farming

implements like the hoe and digging stick, resulted in male specialisation in agriculture and female specialisation in domestic activities. This gender-based division of labour then generated the deeply-held and persisting belief that the natural role of women was to work within the home. Combining contemporary survey data on gender norms and ethnographic data on societies' traditional plough use, and examining variation across countries, subnational districts, ethnic groups and individuals, the study shows that contemporary societies with ancestors who traditionally engaged in plough agriculture are more likely to report attitudes that reflect the belief that men and women are less equal, and they tend to have less participation of women in the workplace, in management positions, and in politics.

3.3 Evidence from Africa's slave trades

There is also ample evidence of historic shocks affecting cultural evolution in other environments. For example, Nunn and Wantchekon (2011) examine the long-term impacts the trans-Atlantic and Indian Ocean slave trades had on subsequent distrust. Using estimates of the number of slaves taken from each ethnic group during the two slave trades combined with data from the 2005 Afrobarometer surveys, the authors identify a negative relationship between an individual's trust in others and the intensity of the slave trades among their ethnic group in the past. The authors undertake a number of identification strategies and find evidence that the relationship is causal and not due to omitted factors.

The study then attempts to distinguish between the two most plausible channels through which the slave trade may have affected trust. One is that the slave trade altered the cultural norms of the descendants of those exposed to the trade, making them inherently less trusting. A second is that the slave trade resulted in a long-term deterioration of domestic institutions, which causes individuals to be less trusting of others today. Using a number of different strategies, the total impact is decomposed into the two channels. According to their estimates, the slave trades adversely affected trust through both cultural norms and institutions, but the culture channel is about twice the magnitude of the institutions channel.

Studies also examine other cultural impacts of Africa's slave trades. Dalton and Leung (2011) and Edlund and Ku (2011) examine the hypothesis that the severe imbalance in sex ratio, due to the fact that males were disproportionately taken during the trans-Atlantic slave trade, altered the beliefs and values about the acceptability of polygyny. Examining variation across ethnicities (Dalton and Leung 2011) and countries (Edlund and Ku 2011), the studies show that a history of the trans-Atlantic slave trade is associated with a greater prevalence of polygyny today.

3.4 Evidence from European history

Examining cultural evolution within Europe, Guiso, Sapienza, and Zingales (2008a) empirically examine the well-known hypothesis put forth by Putnam, Leonardi, and Nanetti (1993) that Italian city states that became independent during the 1000–1300 period developed higher levels of social capital that persist until today. The authors show that looking across 400 Italian cities, there is a positive relationship between their measures of social capital and whether the city was free during the medieval period.

Also in the Medieval European context, Avner Greif (1994), examines the historical origins of the divergent evolution of collectivist and individualist cultures among the Genoese and Maghribis, respectively. Carefully combining insights from game theory and archival evidence, Greif shows that the differences between the two groups have their origins in the different strategies undertaken by medieval merchants to prevent overseas agents from behaving opportunistically during long-distance trade. The Maghribi merchants relied on a collective enforcement strategy, where all merchants collectively punish any agent who had cheated. By contrast, among the Genoese merchants enforcement was achieved through an individual punishment strategy (Greif 1993). Greif carefully models the strategic trade environment and shows that both situations are Nash equilibria of the underlying game, the key difference being the cultural beliefs (or expectations) of the merchant and agent in the game. The different trading relations impacted the societies more broadly, resulting in two distinct cultural trajectories (Greif 1994).

3.5 Evidence from religion

The last body of evidence that I describe has its origins in one of the oldest and most well known hypotheses about the relationship between history, culture, and long-term development. This is Max Weber's (1930) argument that Protestantism, in contrast to Catholicism, approved the virtues of hard work and the accumulation of wealth, and that these values, referred to as the "Protestant work ethic," provided the moral foundation that spurred the transition to a modern market based industrial economy.

A number of scholars have taken Weber's hypothesis to the data, finding broad empirical support. The studies examine the persistent impacts of either the Protestant Reformation or historical overseas Protestant missionary activities on contemporary religious beliefs, education, or economic development (e.g., Woodberry 2004; Becker and Woessmann 2009; Bai and Kung 2011; Nunn 2010; Nunn 2011). All studies find evidence of a long-term impact of the Protestant religion.

3.6 Evidence of shorter-term persistence

The studies discussed so far, examining the impact of historical events on culture, all take a very long-run perspective. However, short-term evidence from a very micro-level also exists. An example is the recent, innovative study by Madestam and Yanagizawa-Drott (2011) that provides evidence that, among adult Americans, values related to politics and nationalism are affected by whether it happened to rain on the fourth of July during the individual's childhood. They find that rain on the fourth of July shifts adult values away from the Republican position and decreases political participation. Their explanation is that childhood activities experienced on the fourth of July – like parades, barbecues, and fireworks displays – through socialisation and group experiences, shape an individual's patriotism and his or her political values. Because these activities all occur outdoors, rainfall impacts the likelihood that they occur or are attended, and therefore affects the extent to which the socialisation takes place.

Giuliano and Spilimbergo (2009) also consider the impact of childhood experience on adult beliefs, but focus on beliefs about whether good outcomes are primarily determined by luck rather than by hard work. They find that growing up in a recession increases the likelihood that an individual believes that good outcomes are primarily determined by luck and not by effort.⁵

Clingingsmith, Khwaja, and Kremer (2009) study the impacts of participating in the Hajj pilgrimage to Mecca. They find that participation increases beliefs in peace, equality, and harmony between ethnic groups (including those from different religions). The authors provide evidence that the change in values arises because of interactions with Hajjis from different parts of the world during the pilgrimage. In a very different setting, Botton and Perez-Truglia (2011) show that in the United States, Catholic religiosity is strongly adversely impacted by reports of sexual abuse among local Catholic clergy. Rohner, Thoenig, and Zilibotti (2012) put forth evidence that civil conflict in Uganda decreases individuals' trust in others and increases the salience of ethnicity.

Overall, mounting evidence suggests that history can play an important role in shaping culture and its evolution. Given the importance of culture in individual decision making, this suggests the real possibility that cultural change and its persistence is an important channel through which historical persistence operates.

Admittedly, this literature still falls far short of understanding the specific mechanisms and channels through which history and culture persist. One possibility is that since culture is slow moving, historical events that affect the costs and benefits of different cultural traits will have lasting impacts. However, although we

5 An interesting contrast between the findings of Madestam and Yanagizawa-Drott (2011) and Giuliano and Spilimbergo (2009) is the years in which the events being examined are found to have the greatest impacts. Giuliano and Spilimbergo find 18–25 to be the most important years, while Madestam and Yanagizawa-Drott find 7–10 to be the most important for political views, and 15–18 for political participation.

have examples of cultural traits persisting for centuries (Voigtlander and Voth 2011), we also have examples of culture changing within a few short decades (Alesina and Fuchs-Schundeln 2007). The natural question which then arises is when does culture persist and when does it change. In other words, when do historical shocks to culture have persistent impacts and when do they not? A potential answer to this question, which is the focus of the next section, is that cultural beliefs generate formal institutions that in turn act to reinforce the initial cultural trait. We now turn to this important interdependency.

4 CULTURE, INSTITUTIONS, AND THE COLONIAL ORIGINS HYPOTHESIS

4.1 Culture affecting formal institutions

Historically, there are many examples of culture impacting the evolution of domestic institutions. The most striking example is the European migrant communities established around the globe after the Age of Exploration. At a macro-level, the impact that culture has on domestic institutions is illustrated by Acemoglu et al.'s (2001) colonial origins hypothesis. As they argue, and document empirically, the types of institutions that were established were effected by the potential mortality rates among settlers. In areas in which settlement was possible, secure property rights tended to be established and where settlement was not possible, extractive institutions developed.

An important point that has been overlooked is the presumption that better institutions would naturally arise in areas where European settlement was possible. Examining this process at the micro level reveals a subtle but important point. The institutions that were established by European migrants arose from the values and beliefs that the first migrants brought with them from the Old World. In other words, the institutions first established were endogenous to the cultural beliefs of the early migrants.

The details of this process are described in detail in David Hackett Fischer's (1989) book *Albion's Seed*. Fisher documents four waves of early migration to North America. The first migrants were the Puritans (1629–1641) who settled in Massachusetts. These migrants, who were primarily middle class from East Anglia, migrated for religious reasons and because of intolerable conditions at home. The second wave of migrants (1642–1675) were the Cavaliers and with them indentured servants, who migrated from the South and Southwest of England to the Chesapeake Bay. The primary motivation for this group was what Fischer calls the younger son syndrome. Men who were not the oldest son, and therefore did not inherit the family estate, set sail to the New World to create estates of their own. The third wave (1675–1725) were the Quakers, who migrated to escape persecution in England. The Quakers, who tended to be lower middle class from England's North Midlands, settled in the Delaware Valley. The final wave

(1717–1775) were the Scotch-Irish who migrated primarily for material reasons. They were from the borderlands of Northern England, Scotland and Ireland and settled in the backcountry of the US South. Although they were a mixed group, the majority were lower class.

Fischer documents how differences in the values of each immigrant wave generated differences in the institutions that were established in the new colonies. The Puritans, in addition to their well-known belief in the importance of universal education, were obsessed with maintaining proper order. The institutions they established – laws requiring universal education, high tax rates, sizable government intervention, and swift and brutal justice – clearly reflected this. In addition, a number of institutional structures, like the town meeting and town covenants, were transplanted directly from East Anglia.

In contrast to the Puritans, the Virginia Cavaliers believed that inequality was natural. For them the ideal society was less about equality, but about maintaining order and the existing hierarchy. These values resulted in limited education, lower taxes, less government spending, and an informal system of justice based on hierarchical violence.

The Quakers, although a religious group like the Puritans, had a very different notion of freedom. They believe in personal freedom, including freedom of choice and even freedom to make the wrong choice. This is very different from the Puritans who were obsessed with limiting individual freedom to maintain social order. The Quakers' emphasis on personal freedoms strongly influenced the institutions that were established in the Delaware Valley. All citizens were granted equal access and rights to courts, the laws established emphasised personal rights and limited government intervention in personal and religious affairs, and punishments were much less brutal than in New England with a greater emphasis on rehabilitation. As well, taxation was much more limited than in New England. Tax laws required the consent of the people and expired every 12 months.

The fourth group, the Scotch-Irish, believed in natural liberty: freedom from the constraints of the law, order and justice, and in minimal government, light taxes, and the right to armed resistance of authority. The institutions that arose in the Southern Backcountry were an outgrowth of these values. The emphasis on minimal government and freedom from the law resulted in a very limited justice system. Societies relied primarily on self-policing by ad-hoc vigilante groups (i.e., the 18th-century 'regulators'); sheriffs were used only to patrol the public roads. Formal laws emphasised the importance of personal property and punished crimes against these rights much more severely than violent crimes against people. Like the legal institutions, the political institutions were also very informal, with no town meetings, and no local courts or commissions.

As Fischer's analysis clearly shows, once one examines at the micro-level the origins of colonial institutions, it becomes clear that they were determined by the cultural values of the first settlers. Particularly important were their values and beliefs on liberty, equality, and the appropriate role of government.

The importance of culture in shaping colonial institutions provides an interesting insight into a recent debate within economics related to Acemoglu et al.'s (2001) colonial origins hypothesis. The empirical results provided in Acemoglu et al. (2001) derive from IV estimates of the impact of institutions on long-term economic development, using historical European settler mortality rates in overseas colonies as an instrument for current institutions. They argue that in areas where Europeans could settle, growth-promoting institutions that provided a rule of law and protection of private property rights were established. However, Glaeser et al. (2004) make the point that European settlers not only brought European institutions to the newly settled lands, but also brought “themselves, and therefore their know-how and human capital” (Glaeser et al. 2004, 289). They argue that this violates the exclusion restriction from the IV estimates from Acemoglu et al. (2001). The crucial point is that European settlers not only established growth-promoting institutions, but they also brought their know-how with them, which also matters for long-term development.

The analysis of Fischer (1989) shows that the view of “know-how” and institutions as competing factors of development somewhat misses the mark. Glaeser et al. (2004) are certainly correct that the primary thing that migrants brought with them is themselves and this had important consequences. Along with the settlers also came their beliefs and values regarding freedom, liberty, equality, and the appropriate role of government. These were the crucial factors that determined the nature of the initial institutions that were established. Although it is true that the settlers brought themselves, this is part of the mechanism of Acemoglu et al. (2001). The domestic institutions that were established by Europeans were endogenous to the culture the settlers brought with them. Rather than being two competing explanations for long-term growth, they are both part of the same evolutionary process. The confusion arises from the fact that neither paper acknowledges the role culture plays in shaping domestic institutions.

European colonisation is one historical episode that illustrates the endogeneity of institutions to cultures. Other micro-historical studies also provide similar evidence. For example, Zerbe and Anderson (2001) document that the initial property rights institutions established during the 1848 California Gold Rush reflected the values and beliefs that miners brought with them Westward. The beliefs – which included individualism, respect for property, and the view that rewards should be commensurate with effort – first developed into collectively practiced norms of behavior (i.e., informal institutions) before being formalized as written laws.

The well-known work by Greif (1994) on the cultural differences between the Maghribi and Genoese medieval traders also illustrates the role of culture in shaping the formation of formal institutions. The Genoese developed institutions that arose from their individualist cultural beliefs, including a formal legal system as well as other formal organisations that helped to facilitate exchange. By contrast, the institutional structures of the Maghribis grew out of their

collectivist cultural beliefs. Because the Maghribis continued to rely on informal enforcement mechanisms, organisations remained limited in size and scope.

Although these examples provide clear evidence that institutions can be affected by beliefs about what is right and just, it is important to keep in mind that institutions are not always dependent on cultural values. An example is the pirate institutions that evolved in the late 17th and early 18th century. These institutions, which included checks on authority, separation of power, and written constitutions, were established to constrain predation by the captain, as well as shirking and free-riding of crew-members (Leeson 2007). In this case, institutions were not shaped by cultural beliefs, but by efficiency considerations and material payoffs rather than by deeply held values.

4.2 Institutions affecting culture

There is also the possibility of feedback effects, with formal institutions affecting culture. Empirically, a number of recent studies have documented evidence for this. For example, Guido Tabellini (2008a) examines differences in trust in others, respect for others, and confidence in the benefit of individual effort across regions within Europe. The first-stage of the IV strategy employed in his analysis identifies a strong relationship between the prevalence of these cultural traits and measures of the average quality of domestic institutions between 1600 and 1850. The estimates show that European regions with less well-developed institutions today have less trust in others, less respect for others, and believe less in the value of individual effort.

Becker et al. (2011) examine Eastern European communities within the same contemporary country, but on either side of the historical Habsburg border. They show that communities that were formerly part of the Habsburg Empire, with its greatly respected and well-functioning bureaucracy, today have greater trust in their local government. In a more contemporary setting, Chen and Yeh (2011) find evidence that the legal enforcement of obscenity laws affects sexual attitudes. The authors find that more permissive obscenity precedent leads to an increase in permissive sexual attitudes.⁶

4.3 Historical persistence and the interplay between culture and institutions

Tabellini (2008b) provides a formal model of the interplay between culture and institutions, in an environment in which both are endogenous and co-evolve.

6 The notion that domestic institutions affect cultural norms is not surprising in light of the overwhelming evidence that material payoffs affect preferences and values (since institutions are an important determinant of material payoffs). Bowles and Polania-Reyes (2012) summarise the mounting evidence for this effect.

In the model, there are two potential cultural traits with one valuing cooperation (or believing cooperation is the right thing to do) more than the other. Vertical transmission of these values is modeled explicitly with parents exerting costly effort to instill values of cooperation. One of the primary innovations of the paper is to also model the endogenous formation of institutions (that enforce cooperation) through majority voting. Tabellini shows that the co-evolution of culture and institutions generates strategic complementarity and multiple equilibria. A culture that values cooperation prefers institutions that strongly enforce cooperation, which in turn increases the returns to cooperation, reinforcing this cultural trait. Conversely, a culture that does not value cooperation prefers institutions that weakly enforce cooperation, which in turn decreases the returns to cooperation, reinforcing a culture that does not value cooperation.

Explaining the persistent impacts of historical shocks on cultural traits is also the focus of Guiso, Sapienza, and Zingales (2008b), who develop a model of the evolution of trust. Values are transmitted from parents to children, but learning also occurs through market transactions. In this setting, multiple equilibria are possible. In one equilibrium, beliefs of mistrust are transmitted from parents to children. Because of these beliefs there is little economic activity and therefore individuals do not learn about the true trustworthiness of the population. The authors call this a “no-trust-no-trade” equilibrium. In another equilibrium, beliefs of trust are transmitted from parents to children and as a result, economic activity and learning take place. In this case, there is high trust and trade. In this environment, a temporary shock to trust can permanently move a society from one equilibrium to the other. Due to the dynamics and learning process for the cultural trait, a temporary shock can have permanent impacts.

5 CONCLUSION

The goal of this article is to illustrate the benefit of understanding cultural values and beliefs as part of the process of historical economic development. Using a working definition of culture as “fast-and-frugal” decision-making heuristics or “short-cuts,” I argued that cultural change and persistence are important channels through which history continues to matter today. In an overview of the existing empirical studies testing for this channel, I provided illustrative evidence that numerous historical shocks – including Africa’s slave trades, medieval long-distance trading relations, waves of European migration, the adoption of plough agriculture, and foreign missionary activity – have had long-term impacts on culture.

I argued that there is an important interplay between culture and domestic institutions, the channel underlying historical persistence that has received the most attention in the literature. I argued that one cannot fully understand the transplantation of European legal and political institutions during the colonial

period without understanding the cultural values and beliefs that were brought by the first European explorers and settlers. It is these beliefs about justice, liberty and the appropriate role of government that determined the nature of the institutions that were first established.

REFERENCES

- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. The colonial origins of comparative development: an empirical investigation. *American Economic Review* 91: 1369–1401.
- Alesina, Alberto, and Nicola Fuchs-Schündeln. 2007. Good bye Lenin (or not?): the effect of Communism on people's preferences. *American Economic Review* 97, no. 4: 1507–28.
- Alesina, Alberto, Paola Giuliano, and Nathan Nunn. 2011. *On the origins of gender roles: women and the plough*. Photocopy: Harvard University.
- Bai, Ying, and James Kai-sing Kung. 2011. Diffusing knowledge while spreading God's message: Protestantism and economic prosperity in China, 1840–1920. Photocopy: Hong Kong University of Science and Technology.
- Bechara, Antoine, Hanna Damasio, Daniel Tranel, and Antonio R. Damasio. 1997. Deciding advantageously before knowing the advantageous strategy. *Science* 275: 1293–5.
- Becker, Sascha O., Katrin Boeckh, Christa Hainz, and Ludger Woessmann. 2011. The empire is dead, long live the empire! Long-run persistence of trust and corruption in the bureaucracy. Photocopy: Warwick University.
- Becker, Sascha O., and Ludger Woessmann. 2009. Was Weber wrong? A human capital theory of Protestant economic history. *Quarterly Journal of Economics* 124, no. 2: 531–96.
- Boserup, Ester. 1970. *Woman's role in economic development*. London: Allen and Unwin.
- Botton, Nicolas, and Ricard Perez-Truglia. 2011. Does religion foster pro-social behavior? Photocopy: Harvard University.
- Bowles, Samuel, and Sandra Polania-Reyes. 2012. Economic incentives and social preferences: substitutes or complements? *Journal of Economic Literature* forthcoming.
- Boyd, Robert, and Peter J. Richerson. 1985. *Culture and the evolutionary process*. London: University of Chicago Press.
- Boyd, Robert, and Peter J. Richerson. 2005. *The origin and evolution of cultures*. Oxford: Oxford University Press.
- Chen, Daniel L., and Susan Yeh. 2011. Does obscenity law corrode moral values and does it matter? Evidence from 1958–2008. Photocopy: Duke University.
- Clingingsmith, David, Asim Ijaz Khwaja, and Michael Kremer. 2009. Estimating the impact of the Hajj: religion and tolerance in Islam's global gathering. *Quarterly Journal of Economics* 124, no. 3: 1133–70.
- Cohen, Dov, Richard E. Nisbett, Brian F. Bowdle, and Norbert Schwarz. 1996. Insult, aggression, and the southern culture of honor: an “experimental ethnography”. *Journal of Personality and Social Psychology* 70, no. 5: 945–60.
- Dalton, John T., and Tin Cheuk Leung. 2011. Why is polygyny more prevalent in western Africa? An African slave trade perspective. Photocopy: Wake Forest University.
- Damasio, Antonio R. 1994. *Descartes' error: emotion, reason and the human brain*. New York: G.P. Putnam's Sons.

- Damasio, Hanna, Thomas Grabowski, Randall Frank, Albert M. Galaburda, and Antonio R. Damasio. 1994. The return of Phineas Gage: clues about the brain from the skull of a famous patient. *Science* 264, no. 5162: 1102–5.
- de Sousa, Ronald. 1987. *The rationality of emotion*. Cambridge: MIT Press.
- Edlund, Lena, and Hyejin Ku. 2011. *The slave trade and polygyny in Africa*. Photocopy: Columbia University.
- Elster, Jon. 1999. *Alchemies of the mind: rationality and the emotions*. Cambridge: Cambridge University Press.
- Engerman, Stanley L., and Kenneth L. Sokoloff. 1997. Factor endowments, institutions, and differential paths of growth among New World economies: a view from economic historians of the United States. In *How Latin America fell behind*, ed. Stephen Harber, 260–304. Stanford: Stanford University Press.
- Fernandez, Raquel, and Alessandra Fogli. 2009. Culture: an empirical investigation of beliefs, work, and fertility. *American Economic Journal: Macroeconomics* 1, no. 1: 146–77.
- Fischer, David Hackett. 1989. *Albion's seed: four British folkways in America*. New York: Oxford University Press.
- Fisman, Ray, and Edward Miguel. 2007. Corruption, norms and legal enforcement: evidence from diplomatic parking tickets. *Journal of Political Economy* 115, no. 6: 1020–48.
- Gentner, Dedre. 1982. Why nouns are learned before verbs: linguistic relativity vs. natural partitioning. In *Language development: volume 2. Language, thought and culture*, ed. S.A. Kaczaj, 301–34. New Jersey: Lawrence Erlbaum.
- Gigerenzer, Gerd. 2007. *Gut feelings: the intelligence of the unconscious*. New York: Penguin.
- Gigerenzer, Gerd, and Daniel G. Goldstein. 1996. Reasoning the fast and frugal way: models of bounded rationality. *Psychological Review* 103, no. 4: 650–69.
- Giuliano, Paola, and Antonio Spilimbergo. 2009. Growing up in a recession: beliefs and the macroeconomy. National Bureau of Economic Research (NBER) Working Paper 15321.
- Glaeser, Edward L., Rafael La Porta, Florencio Lopez-De-Silanes, and Andrei Shleifer. 2004. Do institutions cause growth? *Journal of Economic Growth* 9: 271–303.
- Greif, Avner. 1993. Contract enforceability and economic institutions in early trade: the Maghribi traders' coalition. *American Economic Review* 83, no. 3: 525–48.
- Greif, Avner. 1994. Cultural beliefs and the organization of society: a historical and theoretical reflection on collectivist and individualist societies. *Journal of Political Economy* 102, no. 5: 912–50.
- Grosjean, Pauline. 2011. A history of violence: the culture of honor as a determinant of homicide in the US South. Photocopy: University of New South Wales.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2008a. Long-term persistence. Photocopy: University of Chicago.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2008b. Social capital as good culture. *Journal of the European Economic Association* 6, nos. 2–3: 295–320.
- Heine, Steven J. 2012. *Cultural psychology*. New York: W.W. Norton.
- Henrich, Joseph, R. Boyd, S. Bowles, H. Gintis, E. Fehr, C. Camerer, R. McElreath, et al. 2005. “Economic man” in cross-cultural perspective: ethnography and experiments from 15 small-scale societies. *Behavioral and Brain Sciences* 28: 795–855.

- Henrich, Joseph, Robert Boyd, Sam Bowles, Colin Camerer, Herbert Gintis, Richard McElreath, and Ernst Fehr. 2001. In search of homo economicus: experiments in 15 small-scale societies. *American Economic Review* 91, no. 2: 73–9.
- Henrich, Joseph, Jean Ensminger, Richard McElreath, Abigail Barr, Clark Barrett, Alexander Bolyanatz, Juan Camilo Cardenas, et al. 2010. Markets, religion, community size, and the evolution of fairness and punishment. *Science* 327, no. 5972: 1480–4.
- Jakiela, Pamela. 2009. How fair shares compare: experimental evidence from two cultures. Photocopy: Washington University of St Louis.
- Jakiela, Pamela. 2011. Social preferences and fairness norms as informal institutions: experimental evidence. *American Economic Review Papers and Proceedings* 101, no. 3: 509–13.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. 1997. Legal determinants of external finance. *Journal of Finance* 52: 1131–50.
- Leeson, Peter T. 2007. An-arrgh-chy: the law and economics of pirate organization. *Journal of Political Economy* 115, no. 6: 1049–94.
- Madestam, Andreas, and David Yanagizawa-Drott. 2011. Shaping the nation: estimating the impact of Fourth of July using a natural experiment. Photocopy: Harvard University.
- Nisbett, Richard E. 2003. *The geography of thought: how Asians and westerners think differently . . . and why*. Toronto: Free Press.
- Nisbett, Richard E., and Dov Cohen. 1996. *Culture of honor: the psychology of violence in the South*. Boulder: Westview Press.
- Nosek, Brian A., Frederick L. Smyth, N. Sriram, Nicole M. Lindner, Thierry Devos, Alfonso Ayala, Yoav Bar-Anan, et al. 2009. National differences in gender – science stereotypes predict national sex differences in science and math achievement. *Proceedings of the National Academy of Sciences* 106, no. 26: 10593–7.
- Nunn, Nathan. 2009. The importance of history for economic development. *Annual Review of Economics* 1, no. 1: 65–92.
- Nunn, Nathan. 2010. Religious conversion in colonial Africa. *American Economic Review Papers and Proceedings* 100, no. 2: 147–52.
- Nunn, Nathan. 2011. Gender and missionary influence in colonial Africa. Photocopy: Harvard University.
- Nunn, Nathan, and Leonard Wantchekon. 2011. The slave trade and the origins of mistrust in Africa. *American Economic Review* 101, no. 7: 3221–52.
- Putnam, Robert, Robert Leonardi, and Raffaella Nanetti. 1993. *Making democracy work*. New York: Simon & Schuster.
- Rohner, Dominic, Mathias Thoenig, and Fabrizio Zilibotti. 2012. Seeds of distrust: conflict in Uganda. Photocopy: University of Zurich.
- Salaman, Sonya. 1980. Ethnic differences in farm family land transfers. *Rural Sociology* 45, no. 2: 290–308.
- Tabellini, Guido. 2008a. Culture and institutions: economic development in the regions of Europe. *Journal of the European Economic Association* 8, no. 4: 677–716.
- Tabellini, Guido. 2008b. The scope of cooperation: values and incentives. *Quarterly Journal of Economics* 123, no. 3: 905–50.

- Tardif, Twila. 1996. Nouns are not always learned before verbs: evidence from Mandarin-speakers early vocabularies. *Developmental Psychology* 32: 492–504.
- Voigtlander, Nico, and Hans-Joachim Voth. 2011. Persecution perpetuated: the medieval origins of anti-semitic violence in Nazi Germany. National Bureau of Economic Research (NBER) Working Paper 17113.
- Weber, Max. 1930. *The Protestant ethic and the spirit of capitalism*. London: Routledge.
- Woodberry, Robert D. 2004. The shadow of empire: Christian missions, colonial policy, and democracy in postcolonial societies. PhD diss., University of North Carolina at Chapel Hill, 2004.
- Zerbe, Richard O., and C. Leigh Anderson. 2001. Culture and fairness in the development of institutions in the California gold fields. *Journal of Economic History* 61, no. 1: 114–43.