Culture: Persistence and Evolution

Francesco Giavazzi, Ivan Petkov and Fabio Schiantarelli [*]

September 9, 2015

Abstract

This paper presents evidence on the speed of evolution (or lack thereof) of a wide range of values and beliefs of different generations of European immigrants to the US and interprets the evidence in the light of a simple model of socialization and identity choice. The main result is that persistence differs greatly across cultural attitudes. For instance, some family and moral values, political orientation, deep personal religious values converge very slowly to the prevailing US norm. Others, such as attitudes toward cooperation, children's independence, women's work, and even the frequency of religious practice, converge rather quickly. The results obtained studying higher generation immigrants differ greatly from those found when the analysis is limited to the second generation, as typically done in the literature, and they imply a lesser degree of persistence than previously thought. Finally, we show that persistence is "culture specific" in the sense that the country from which one's ancestors came matters for the pattern of generational convergence.

JEL Classification: A13, F22, J00, J61, Z1.

Keywords: Culture, Values, Beliefs, Transmission, Persistence, Evolution, Immigration, Integration

1 Introduction and Motivation

Learning how a person's values and beliefs are formed and transmitted from one generation to the next is the first step towards understanding the more general problem of how persistent a society's values and beliefs are – an issue on which there is abundant disagreement. Some contributions argue that values and beliefs are deeply rooted in the country or ethnic group to which a person belongs, and, although they themselves may be the result of history or geography, they evolve slowly over time.[1] Others, instead, suggest that cultural attitudes can change rather quickly in response to changes in economic incentives and opportunities, in technology, and in institutions.[2] Both views of culture (slow versus fast moving) have truth in them, in the sense that while some cultural traits certainly go back to the distant past and affect today's economic and institutional outcomes, it is also true that many values and beliefs evolve in response to changes in technology, economic environment, and in political institutions.

An important distinction in understanding the process through which a person's values and beliefs are formed is that between "vertical" and "horizontal" transmission. Inside the family, parents shape their children's preferences balancing the desire to share common values with them, with the concern for teaching traits that will make it easier for their children to function in the social environment in which they will live: this is vertical transmission. But children are also exposed to the world outside the family and thus are subject to a process of social imitation and learning external to the family: this is horizontal transmission.[3] Two different models of cultural transmission are thus at work, as in the models of evolutionary biology[4]: vertical transmission, like genetic inheritance, tends to be relatively more conservative, giving rise to slow evolution of culture; horizontal transmission, as in an epidemic, may result in a rapid change in the number of people who adopt a new cultural characteristic particularly if it is attractive to the receiver. This can happen, not in historic time, but in the space of a few generations.

Thinking about these issues, it is normal to consider immigrants an ideal group to study. The incentives that give rise to vertical transmission could be particularly strong among immigrants, as early-generations immigrants may want their children to share some of the

---

[1]See Putnam (1993), Guiso, Sapienza and Zingales (2006, 2007, 2008), Tabellini (2008a,b), Alesina, Giuliano and Nunn (2013), Durante (2009), and Roland (2004). See Alesina and Giuliano (2013) for a recent review.

[2]See Gruber and Hungerman (2008), Alesina and Fuchs-Schuendeln (2007), Di Tella, Galiani and Schargrodsky (2007), Giuliano and Spilimbergo (2014), Fernandez (2011), Fehr (2009), and Bowles (1998).

[3]The transmission that occurs from a member of the previous generation who is external to the family to a member of the present generation is often called oblique. We consider it as a part of horizontal transmission.

[4]See Cavalli-Sforza (1981) and (2001, ch.6), Boyd and Richerson (1985, 2005).

values that they, or their own parents, brought with them from their country of origin. But some of these inherited values may be at odds with the culture of the new country in which they are living, possibly hindering productive interaction with other groups, and may be modified by the social interactions in the new environment: horizontal transmission could thus also be particularly strong among immigrants.

In this paper we investigate the speed of evolution (or lack thereof) of a wide range of cultural attitudes for different generations of European immigrants to the United States. We look at a variety of attitudes, rather than a single one – as sometimes is done in the literature on cultural transmission – because there is substantial heterogeneity across cultural traits and immigrant origins in the speed with which attitudes evolve across generations. We study the transmission of attitudes through four generations (a century) because it is possible that some attitudes may appear to be quite persistent within a couple of generations but change significantly by the forth generation. We use data from the General Social Survey (GSS) to analyze the evolution of cultural attitudes about religion, family, gender, sexuality, cooperation, redistribution, etc., distinguishing between first, second, third and fourth (or higher) generations of European immigrants to the US. The focus on European immigrants is largely imposed on us by the availability of sufficient data for multiple generations distinguished by country of origin. We use data contained in 21 waves (the exact number varies across attitudes) of the GSS survey collected between the end of the 1970's and 2012.

Immigrants provide a particularly useful laboratory for the study of the evolution of values and beliefs because, as mentioned above, their cultural attitudes are likely to bear the mark of the country from which they, their parents or their grandparents emigrated.[5] However, they are also influenced by their exposure to US society and its social, political, and economic institutions, often very different from those of the country of origin. They thus provide an interesting quasi-experiment for the effect on inherited cultural attitudes of a change in the economic and social environment. The conditions under which this leads to integration of the immigrants or to the persistence of separate cultural traits has been debated in the theoretical and empirical literature.[6]

We interpret our findings in the light of a simple model of socialization and identity choice. The model builds largely on the contributions by Bisin and Verdier (2001) on the

---

[5]See Fernandez (2008).

[6]See the seminal paper by Lazear (1999) on the incentives to and conditions for integration in heterogeneous populations and the inter-temporal extension in Konya (2005). Bisin and Verdier (2000), (2001) provide conditions under which heterogeneity in cultural values may be a stable equilibrium in an optimizing model of cultural transmission under imperfect parental empathy. See also Bisin, Topa and Verdier (2004), Tabellini (2008b), and Bisin and Verdier (2010) for a review. See also Guiso, Sapienza and Zingales (2008) for a model of transmission of beliefs, Fernandez (2013) for a model of beliefs formation, and Doepke and Zilibotti (2008) for a model of endogenous preference formation.

choice of socialization by parents, and on Lazear (1999) and Konya (2005) for a child's choice of her cultural identity. Parents derive utility form the child retaining their original cultural trait, but also consider the possibility that this may hinder the child's ability to interact productively with the majority. The child plays an active role in the model and chooses her identity considering the expected transaction gains from assimilation and a switching cost that partly depends upon the parents socialization effort, and which also contains a component that is randomly distributed across the population. Parents choose the optimal level of socialization taking into account of the child's optimization problem, knowing the distribution of the switching cost, but not the realization for their child. The models yields two possible type of equilibria: one with complete assimilation and another with the minority group not assimilating. The occurrence or not of assimilation and its speed, when it happens, depends upon a set of parameters that are likely to vary across different cultural traits and across countries of origin, such as the child's net transaction gains and the switching costs from assimilating, the utility benefit to the parents from the child maintaining the original trait, together with the costs of the socialization effort, and, finally, the discount factor parents apply to the child's utility.

In studying how a person's values and beliefs are formed and transmitted from one generation to the next, and whether or not they converge, we face a number of empirical challenges. First and foremost, immigrants, even from the same country of origin, differ, depending on when the first generation of the "dynasty" they belong to arrived in the US. Irish immigrants who arrived in the 1890s, for example, are clearly different, in terms of the values they brought with them, from post World War II first generation Irish immigrants. One has to account for this in empirical work, in order to separate convergence of values across generations of immigrants from convergence of values over time across countries of origin. Ideally, one would want to study the transmission of values and beliefs within a single dynasty, starting with first generation immigrants born before World War I. This is what we do in our analysis, compatibly with the frequency of the data, which suggests the use of a parsimonious specification of the generation and dynasty effects (see Section 3). A second empirical challenge is how to define ethnicity, generation and convergence. In all cases, we will rely on self-reported ethnicity, but allow different degrees of tightness of the definition (including or excluding respondents with multiple ethnicities, due to inter-ethnic marriages of their forbearers). We illustrate the definition of generations in Section 2. We also propose and experiment with different convergence criteria, described in Section 4. Finally, one should not forget that our results are specific to, say, Irish immigrants and cannot be extended to all Irishmen, including those who never left Ireland, since emigrants are not a random sample of the population. We will discuss how selection issues within first generation

4

immigrants, between those who decide to stay and those who return to the original countries leads to an underestimate or overestimate of the speed of change of culture.[7]

We are certainly not the first ones to analyze these issues.[8] However, most existing contributions focus on the *persistence* of cultural traits for *second* generation immigrants and on their effect on economic and social outcomes. For instance, Giuliano (2007) presents evidence that cultural heritage is important for living arrangements, Fernandez (2007) for female labor force participation, and Fernandez and Fogli (2009) for female labor force participation and fertility outcomes, all using US census data. Fernandez and Fogli's (2006) results, using the GSS, are also supportive of an effect of the culture of the country of ancestry on fertility outcomes for US immigrants, although no distinction is made between second and higher generation immigrants.[9] Exceptions, in the sense that they use generations beyond the second, are Antecol (2000) – who finds that culture matters for the gender gap in labor force participation, for both the first, second and higher generations of US immigrants, although less for the latter – and Borjas (1992) who shows that ethnic capital (measured as average ethnic specific education, professional achievement or wages) has a greater effect on children's education, occupation and wages for both the second and the third generation, although the effect tends to be higher for the second.[10]

The paper has three main findings. First we provide evidence of heterogeneity across cultural traits in the speed with which they evolve across generations and converge to the prevailing norm. We document the persistence of family and moral values (parental control on teenager's access to contraception, obedience of a child as an important quality, ease of divorce, access to abortion for any reason, and frequency of social events with relatives), general political views, and deep individual religious values (as reflected in the answers to questions regarding belief in life after death, frequency of prayer, approval of prayer in public

---

[7]The speed at which attitudes evolve may depend upon the community within which a person lives. Italians immigrants who were brought up in New York's Little Italy neighborhood are likely to lose their "country-of-origin" attitudes more slowly than Italians who settled in the mid-West. Sample sizes in the GSS do not allow us to address fully this issue. We will leave it for future research.

[8]Earlier contributions in the sociological literature use early waves of the GSS, and focus on the assimilation process of specific groups, such as Italian immigrants in Greeley (1974, ch.4) and Alba (1985, ch.6). The results in Greeley are based on a sample of males only. Both studies emphasize the change, as opposed to the persistence of cultural attitudes, but do not distinguish among different generations.

[9]See also Algan, Bisin, Manning and Verdier (2012) and associated authors for a study of the pattern of cultural and economic integration of immigrants in Europe, and how they differ by immigrant communities, religious beliefs and host countries. The empirical evidence is based on the European Social Survey, complemented by other data sources, and the focus is on the first and second generation's indicators of social and cultural integration (family arrangements, fertility, education, labor market outcomes, religion, language spoken, etc.).

[10]Rice and Feldman (1997) distinguish the level of civic attitudes for Italian immigrants on the basis of the number of grandparents born in the US and reach the surprising conclusion that the descendants of earlier immigrants are more likely to give *less* civic responses than the descendants of later immigrants.

schools). As a result, the values of immigrants of fourth-or-higher generation still bear the imprint of their ancestors, who migrated to the United States many decades earlier. We also show that attitudes towards cooperation (the trustworthiness and helpfulness of others), children's independence, and homosexuality, converge, instead, rather quickly, as successive generations adapt to the norms of the new society in which they live. The same is true – namely relative fast convergence – for the frequency of attendance to religious services. The latter reflects the social dimension of the religious experience and behaves differently from the other slow moving personal religious values mentioned above. Finally, results concerning cultural attitudes towards women's role outside the home imply a fast convergence of attitudes towards women in the workplace, while the results are more mixed for attitudes about the general role of women in society.

These results are largely consistent with our simple model in the sense that faster convergence is observed for attitudes that are likely to generate larger transaction gains from assimilation, such as attitudes towards cooperation, compared to those for which transaction gains are likely to be smaller, such as belief in life after death. Convergence is also slower for attitudes for which the utility gain to the parents from the child retaining the original trait is likely to be higher, such as some family and moral values. Interestingly, although attitudes towards the role of women in the workplace are potentially related with views of other aspects of family structure, their fast convergence can be explained by the large economic gains from having women participating in market work.

Our second important result is that time since the original immigration of the ancestors matters and that the results obtained studying higher generation immigrants differ from those obtained limiting the analysis to the second generation. Thus, finding that the attitudes of second generation immigrants still closely reflect those of the country of origin, does not imply *per se* that attitudes are very persistent. For instance, the beliefs that shape trust of second generation immigrant towards other members of society still bear strongly the mark of the country of origin and are different for immigrants from different countries of origin. However, such differences tend to disappear when you consider fourth or higher-generation immigrants.

Finally, we find that persistence is "culture-specific" in the sense that the country from which one's ancestors came matters in defining the pattern of integration (or lack thereof) with respect to the entire set of cultural traits. Moreover, the strength of the family in each country of ancestry, the degree of difficulty in learning English, and the degree of residential segregation once settled in the US, are (negatively) correlated with the fraction of attitudes for which we observe faster convergence. These results can also be interpreted in the light of our model: switching costs, for instance, are likely to be related to language proximity and

to the strength of family ties. Our model is not rich enough, instead, to interpret the role of residential segregation, since it does not contain a location choice.

The plan of the paper is as follows. In Section 2 we illustrate a simple model of parents' socialization and children's identity choice. In section 3 we discuss how we measure cultural attitudes in the GSS, how we define generations and ethnic origin, and which European countries (or groups of countries) we use in our analysis. In Section 4 we describe how we recover the country of origin effect for different generations, dynasties and time periods, while in Section 5 we illustrate our measure of cultural "convergence". In Section 6 we present and discuss our main empirical results. Section 7 contains several robustness checks and extensions. Section 8 concludes.

2 Why Persistence Can Differ Among Cultural Traits and Countries of Origin : A Model of Cultural Transmission

This section contains a simple model that will help interpret our main empirical findings, namely that different cultural traits may converge at varying speed, or not converge at all. Moreover, the dynamics of cultural convergence may differ across cultures i.e. in terms of our empirical work, across countries of origin. The model is based on the idea that a person's traits evolve through two parallel processes: vertical transmission within the family and horizontal transmission associated with social interactions outside the family. The model draws on the vast literature carefully reviewed in Bisin and Verdier (2011).[11]

The model is set up as follows. Assume there is one cultural trait in the population that can take two values: one associated with the minority, denoted by m and the other associated with the majority, denoted by M. Think of the two traits as representing, for instance, the attitude towards pre-marital sex, one of the attitudes whose evolution we study in our empirical analysis. Recent immigrants (the minority) might still carry their cultural attitudes of the country of origin, which could be quite different from those of the majority in the United States, the new social environment in which they live.

We normalize the population to 1 and assume that the initial size of the minority is q. Consider a second-generation immigrant belonging to the minority group. Personal attitudes are shaped by two forces: "vertical" transmission within the family and "horizontal" transmission from social interactions outside the family. Traits are first transmitted inside the family from parents to their children. As children interact with people outside the family,

---

[11]See also Pichler (2010), Vaughan (2012), and Panebianco (2014).

they may realize that the traits acquired from their parents are not ideal (in a sense that we shall make precise in a moment) for social interactions outside the family. For instance, if the norm in society (the norm of the majority) is that young people live together before deciding whether or not to get married, excluding pre-marital sex will make it more difficult for the child to find a partner and get married. However, breaking with a more traditional view of sexual morality may also generate a costly conflict with one's family, the more so the greater the parents' effort to educate the child.

We shall proceed in three steps. First we study the child's identity choice problem: what determines her decision whether or not to "assimilate", that is to abandon the minority trait and acquire the majority trait.[12] Building on Lazear (1999) and Konya (2005), we assume that switching from the old to the new trait allows a minority member to interact more productively with the majority. However, it also generates a transaction cost in dealing with members of the minority. Moreover, abandoning the original family trait implies a utility cost for the child that, in part, depends upon the effort the parents have put in educating her. Then we shall go back and analyze the parent's socialization problem: parents prefer children with their own cultural trait and hence educate them to this trait, as in Bisin and Verdier (2001). The parent however also "empathizes" with her child, in the sense that she understands that the trait she is trying to transmit may hinder the child's opportunities in the new society. Her educational decision will balance these two incentives.

To keep the problem simple, we assume that each individual lives two periods. In the first period, after having been educated by her family, she interacts with others of the same cohort in society. In the second period she becomes the single parent of a child and decides how much effort to put in socializing the child to her own trait – for instance spending time teaching her ancestors' values. Finally, having analyzed the child's decision whether or not to assimilate, given the education received by her parent, we shall study how the size of the minority evolves over time, given that the cost of assimilation is distributed randomly in the population.

We show that there are two possible equilibria: one in which no child assimilates and the size of the minority group remains constant at the initial level, and one in which instead children assimilate and the minority trait eventually disappears from society. Which of these two equilibria occurs and the speed of convergence to the full assimilation equilibrium depends upon a set of parameters that capture the cost and benefits for the child and for the parent of assimilating or not, and that are likely to vary across cultural traits, and also across countries of origin.

---

[12]See also the seminal paper on identity choice by Akerlof and Kranton (2000), as well as Bisin et al (2011).

2.1 The Child's Identity Choice Problem

The child's problem is a simple variant of Lazear (1999)[13]: V^i, ($i = m$ or M) denotes the surplus produced by a social interaction between two people both belonging to the same group–minority or majority. We assume that the two surpluses are identical ($V^m = V^M = V$), a simplifying assumption which is irrelevant for our results. The interaction between two persons with different cultural traits implies a loss. More specifically, $V(1-\theta^M)$ is the surplus produced by a social interaction between a person, whose parents belong to the minority and who has not assimilated, with another person belonging to the majority, with $0 < \theta^M < 1$. $V(1 - \theta^m)$ is the surplus of the interaction between a person whose parents belong to the minority and who has acquired the majority trait, with another person from the minority, with $0 < \theta^m < 1$. We will assume that $\theta^M > \theta^m$ because it is plausible that the child of a minority parent retains some ability to interact with members of the minority even if she assimilates. There is no loss in the transaction when two people have the same trait, that is in this case the surplus is V. The proportion of the minority group in the population is $q < \frac{1}{2}$ (we omit the time subscript here to keep the notation light). $d(\tau, t_i)$ is the utility cost for a member of the minority for abandoning the parent's trait: it is increasing with the parent's socialization effort τ and also includes an additive stochastic component t_i that can be interpreted as the cost of learning the new (majority) trait, so that $d(\tau, t_i) = d(\tau) + t_i$, with $d(\tau)' > 0$. We assume t_i to be distributed randomly in the population according to the distribution function $G(.)$. The child knows t_i, while the parent does not observe it, but knows its distribution $G(.)$.

The child's meets at random individuals from the minority or majority groups with probability q and $1 - q$ respectively. Following Lazear (1999) we assume that the child decides whether or not to assimilate at the beginning of the period, knowing the probability of meeting a minority or a majority member, but before having actually met them. Her expected utility is therefore equal to $qV + (1 - q)(1 - \theta^M)V$ when the child does not assimilate, and to $q(1 - \theta^m)V + (1 - q)V - d(\tau) - t_i$ when she assimilates. Children are myopic, in the sense that they do not look ahead to when they will become parents. A child i assimilates if the expected gain from assimilation is higher than the expected gain from non-assimilation:

$$(1 - q)V\theta^M - q\theta^m V - d(\tau) - t_i \geq 0 \tag{1}$$

Defining the cumulative density of t_i, with support $[\underline{t}, \bar{t}]$, the proportion of minority individuals that assimilate after a draw of t_i is given by:

---

[13]See also Konya (2005) for a dynamic extension.

$$G\left((1-q)V\theta^M - q\theta^m V - d(\tau)\right) \tag{2}$$

If $(1-q)V\theta^M - q\theta^m V - d(\tau) > \bar{t}$ the child will always decide to assimilate ($G(.) = 1$). If $(1-q)V\theta^M - q\theta^m V - d(\tau) < \underline{t}$ the child will never assimilate ($G(.) = 0$). When $\underline{t} \leq (1-q)V\theta^M - q\theta^m V - d(\tau) \leq \bar{t}$, the child will assimilate with some probability. Assume for simplicity that t_i is uniformly distributed on $[\underline{t}, \bar{t}]$. In this case the probability of assimilation and the proportion of minority individuals who assimilate is given by:

$$Prob\left(t_i \leq (1-q)V\theta^M - q\theta^m V - d(\tau)\right) = \int_{\underline{t}}^{(1-q)V\theta^M - q\theta^m V - d(\tau)} \frac{1}{\bar{t} - \underline{t}} dt = \frac{(1-q)V\theta^M - q\theta^m V - d(\tau)}{\bar{t} - \underline{t}} \tag{3}$$

2.2 The Parent's Socialization Problem

Each family is a single-parent family and produces only one child. As in Bisin and Verdier (2001) the parent can socialize the child at a cost $c(\tau)$, increasing in τ, and she derives utility $\varphi(\tau)$ if the child maintains the family trait, which occurs with a probability she can affect through her educational effort. The parent also cares about her child's utility and how it is affected by her actions that contribute to determining, through $d(\tau)$, the probability of assimilation, and, hence, how productively the child will relate with the majority (and the minority). The extent of empathy is described by β: for $\beta = 0$ the parent doesn't care about the child's utility and only cares about her wish that the child does not assimilate. We abstract from the components of the parent's utility that do not depend upon the costs and benefits of educating the child. Finally we also assume that the parent only cares about her immediate descendants.

Thus the parent maximizes her expected utility $w(\tau)$ given by:

$$\begin{aligned}
w(\tau) &= -c(\tau) + \varphi(\tau)Prob(\text{no child assimilation}) + \\
&\quad + \beta Prob(\text{no child assimilation})\left[qV + (1-q)V(1-\theta^M)\right] \\
&\quad + \beta Prob(\text{child asssimilation })\left[q(1-\theta^m)V + (1-q)V - d(\tau)\right] - \\
&\quad - \beta \int_{\underline{t}}^{(1-q)\theta^M V - q\theta^m V - d(\tau)} \frac{t_i}{\bar{t} - \underline{t}} dt_i
\end{aligned} \tag{4}$$

Let us assume that $c(\tau) = \frac{c}{2}\tau^2$, $\varphi(\tau) = \varphi_0$, and $d(\tau) = d\tau$.[14] The parent's optimal socialization effort is determined by the following first order condition:

---

[14]We could allow $\varphi_0 + \varphi_1\tau, \varphi_1 > 0$ but this would complicate the algebra without improving the intuition.

$$c\tau + \beta d\frac{(1-q)\theta^M V - q\theta^m - d\tau - \underline{t}}{\bar{t} - \underline{t}} = \frac{\varphi_0 d}{\bar{t} - \underline{t}} \tag{5}$$

The interpretation is simple: the left hand side is the marginal cost to the parent from varying τ, composed by the marginal direct socialization/education cost and by the expected change in the assimilation cost for the child, discounted by β (the parent's imperfect empathy parameter); the right hand side is the change in the expected direct benefit for the parent from non-assimilation. Solving for the optimal level of τ, τ^*, one obtains:

$$\tau^* = \frac{\varphi_0 - \beta[(1-q)\theta^M V - q\theta^m V - \underline{t}]}{\frac{c(\bar{t}-\underline{t})}{d} - \beta d} \tag{6}$$

For concavity of the objective function $\frac{\partial^2 w}{\partial \tau} = -c + \frac{\beta d^2}{\bar{t}-\underline{t}} < 0$ and hence the denominator in (6) is positive. We assume that $\varphi_0 - \beta[(1-q)\theta^M V - q\theta^m - \underline{t}] \geqslant 0$ to guarantee that the parent's effort is non negative. The comparative static for τ^* is intuitive. The parent's effort is increasing in φ_0, her benefit if the child does not assimilate. It is instead decreasing in c, the cost of the effort put into educating the child. It is also increasing in θ^M, the penalty for the descendant of a minority parent in interacting with members of the majority, if she holds on to the family trait, and decreasing in θ^m, the penalty for the descendant of a minority parent in interacting with members of the minority, if she adopts the majority trait. In the former case the benefit of assimilating for the child increases, while in the latter it decreases. A strong educational effort by the parent is thus a hindrance for the child, the more so the larger is θ^M and the smaller is θ^m. The empathic parent internalizes this and reduces her socialization effort the larger is θ^M and increases it the smaller is θ^m.

For given values of θ^M and θ^m, an increase in q has a positive effect on the parent's socialization effort because it decreases the probability of meeting a member of the majority, diminishing the expected penalty for descendants of minority parents associated with interacting with the majority (when not assimilated) and increases the cost of interacting with members of the minority (when assimilated). Note that our model does not display the "cultural sustainability property" of Bisin and Verdier (2001), whereby a minority parent makes a greater effort at socialization when q is small.

The effect on the parent's socialization effort of an increase in the total surplus from transactions is negative, as we have assumed that $q < \frac{1}{2}$ and $\theta^M > \theta^m$, so that the transaction net gains from assimilation are positive and the (partly) empathic parent takes this into account, therefore reducing τ^*. The effect of the parameter d, that captures the cost for the child of assimilating, and that depends on the parent's educational effort, is positive: the higher is d , the more effective is the socialization technology and this induces the parent to

11

use it more intensely (increasing her effort). The effect of the discount factor β is ambiguous and the reason is simple: if β increases, it means that the parent gives more weight both the the child's net transaction benefits of assimilation $((1 - q)\theta^M V - q\theta^m)$ and to the switching cost of assimilation $(d\tau)$. The first effect leads the partly emphatic parent to decrease τ^*, so that the child can reap those benefits; the second leads to an increase in τ^*. Hence the effect of β is ambiguous. Finally, for a given spread of the distribution, $\bar{t} - \underline{t}$, a decrease in $\underline{t}$, which generates a leftward shift of the distribution, decreasing its mean, but keeping the variance constant, is associated to a decrease in τ^{*15}: again, this is because the probability of assimilation increases, which increases the penalty for the child of dropping the family trait, a penalty that is greater the larger the parent's educational effort. Given $\underline{t}$, an increase in $\bar{t} - \underline{t}$ has the opposite effect by a similar logic.

2.3 Assimilation and Non-Assimilation Equilibria and Dynamics

Let us assume that that $\underline{t} \leq (1 - q(0))\theta^M V - q(0)\theta^m V - d\tau^* \leq \bar{t}$, where $q(0)$ is the initial proportion of the minority group in the population, so that there is an incentive to assimilate for at least some members of the minority. In this case the probability of assimilation evaluated at the optimal parent's effort, τ^*, is[16]:

$$G\left((1 - q_t)\theta^M V - q\theta^m V - d\left(\frac{\varphi_0 - \beta[(1 - q_t)\theta^M V - q_t\theta^m - \underline{t}]}{\frac{c(\bar{t} - \underline{t})}{d} - \beta d}\right)\right) \tag{7}$$

This is also the proportion of minority members in the population that assimilate. It is easy to see that this proportion is unambiguously increasing in V and θ^M, and decreasing in d, θ^m and q. This is the result of the direct effect of these parameters on G (.) and their effect through τ^*. The effect of the remaining parameters mimics the effect on τ^* with the opposite sign: the proportion of minority members that assimilates, increases in c and decreases in φ_0; the effect of the discount factor β is again ambiguous; for a given spread of the distribution, $\bar{t} - \underline{t}$, a decrease in $\underline{t}$, which generates a leftward shift of the distribution, decreasing its mean, but keeping the variance constant, is associated with an increase in $G(.)$; given $\underline{t}$, an increase in $\bar{t} - \underline{t}$, instead, decreases $G(.)$.

The decrease in the proportion of the minority between $t + 1$ and t , $-(q_{t+1} - q_t)$ equals the proportion of the minority that assimilates between these two dates $G\left((1 - q_t)\theta^M V - q_t\theta^m V - d\tau_t^*\right)$, times the size of the minority at t, q_t[17]:

---

[15]Recall that the mean of the uniform distribution is $\frac{\bar{t} + \underline{t}}{2}$, while the variance is $\frac{(\bar{t} - \underline{t})^2}{12}$.

[16]If $(1 - q(0))V\theta^M - q(0)\theta^m V - d\tau^* > \bar{t}$, the model would generate an uninteresting and implausible dynamics with instant full assimilation.

[17]Assuming that no member of the majority acquires the minority trait is equivalent to assuming that

$$q_{t+1} - q_t = -G\left((1-q_t)\theta^M V - q_t\theta^m V - d\tau_t^*\right)q_t \tag{8}$$

$$= -\frac{(1-q_t)\theta^M V - q_t\theta^m V - d\tau_t^* - \underline{t}}{\bar{t} - \underline{t}}q_t$$

with τ_t^* defined in (6). Equation (8) represents the dynamics of the system when $\underline{t} \leq (1-q_t)\theta^M V - q_t\theta^m V - d\tau_t^* \leq \bar{t}$. When $(1-q_t)\theta^M V - q\theta_t^m V - d\tau^* \leq \underline{t}$ nobody assimilates, $G(.) = 0$ and $q_{t+1} - q_t = 0$. This observation allows us to determine the possible steady state equilibria (where $q_{t+1} - q_t = 0$) and their stability properties. Consider first the value of q_t, $\tilde{q}$, such that $(1 - \tilde{q})\theta^M V - \tilde{q}\theta^m V - d\tau* = \underline{t}$ so that there is no gain from assimilation. For greater (smaller) values of q the net gain is negative (positive). It is easy to show that (see Appendix 2 for details on the dynamics and on the steady-state equalibria):

$$\tilde{q} = \frac{\theta^M V - \frac{\varphi_0 d^2}{c(\bar{t}-\underline{t})} - \underline{t}}{\theta^M V + \theta^m V} \tag{9}$$

Moreover, $0 < \tilde{q} < 1$. If $\tilde{q} < q_0 < \frac{1}{2}$, then the initial proportion of the minority is an equilibrium because there is no net gain from assimilation. Recall that the equation of motion assumes that no member of the majority adopts the minority trait, which is reasonable if indeed we are dealing with a minority ($q_0 < \frac{1}{2}$). If $q_0 < \text{Min}(\frac{1}{2}, \tilde{q})$, the steady state equilibrium implies full integration ($q = 0$). The full integration equilibrium is locally stable with the minority in this case gradually shrinking in size. All this is summarized in Figure 1a and Figure 1b, where the steady state(s) and dynamics of the system are represented. The phase line is upward-sloping and convex and it intersects the 45 degree line at 0 and $\tilde{q}$. In Figure 1a we present the phase diagram for the case in which $\tilde{q} < \frac{1}{2}$, so that two type of equilibria exist, one with full integration and one with no integration (associated, for instance, with an initial size of the minority equal to q_0^a and q_0^{na} respectively). In Figure 1b, we present the case in which $\tilde{q} \geq \frac{1}{2}$ so that only the full integration equilibrium exists. Finally, it is easy to see that $\tilde{q}$ increases, and hence the range of initial values of q_0 for which the full assimilation equilibrium occurs becomes larger, with the loss for a non assimilated person in her dealing with the majority, θ^M, with the size of the total surplus from the transaction, V, with the cost to the parents for the socialization effort, c, with an increase in $\bar{t} - \underline{t}$ for a given $\underline{t}$ (so that both its mean and variance increase). $\tilde{q}$ instead decreases with the penalty for an assimilated child of a minority parent from dealing with members of the minority , θ^m, with

---

$q\theta^{m,M}V - (1-q)\theta^{M,M}V - d^M\tau^M < \underline{t}^M$, where the superscript M (second superscript for the θ parameter) denotes the parameters for the majority. In other terms, for all members of the majority, the gain from more efficient transactions is exceeded by the combined costs of acquiring the minority trait.

the effectiveness of the socialization technology, d, with the direct benefit to the parent of the child maintaining the original trait, φ_0, and with a shift to the right of the distribution of t_i (so that the mean increases for a given spread of the distribution). Note that the parent's discount factor, β, has no effect on $\tilde{q}$. This is because at $q = \tilde{q}$, the probability of assimilation is zero, so the second term on the left hand side of the first order condition for τ, equation (5), is zero, i.e. there is no expected cost for the parent from the child assimilating. As a result, at $q = \tilde{q}$, β does not matter for τ^* and, hence, for $\tilde{q}$.[18]

Summarizing, our simple model can help us to think about the different speed of convergence of various attitudes, as they are shaped by vertical and horizontal transmission. Cultural attitudes differ in the advantage that assimilation confers to the child in transacting with the majority and in the costs that assimilation implies for him, partly shaped by the parent's socialization effort. They also differ in the utility gain they imply for the parent when a child retains the minority cultural trait and in the cost that the parent's educational effort entails. Attitudes, such as trust, are likely to imply a large transaction gain for the child from assimilating. For other traits, such as deep religious attitudes (like the belief in after life or in the importance of personal prayers) the transaction payoff from converging to the majority trait is likely to be smaller. Attitudes, such as those towards the family, may imply large gains for the parents if the child maintains the minority trait, or a large cost for the child if he abandons her family's traditional values and beliefs. Our model also suggests that patterns of integration may differ depending on the country of origin of each immigrant group because of cross country variation, for each cultural attitude, in the costs and benefits of integration. For instance, cross country variation in the strength of the family may be reflected in differences in the perceived benefit for the parents from the child not dropping the trait transmitted within the family. Similarly, the cost for the child of acquiring a new trait may differ across countries. We will use these insights in discussing the empirical evidence on the heterogeneity across attitudes in the speed of convergence of values and beliefs of successive generations of immigrants to the US, and how it varies across countries of origin.

---

[18]In the model we have considered the decision whether or not to assimilate along a single dimension, that is a single attitude. The results however directly extend to the contemporaneous choice of more than one trait, provided we exclude interactions across attitudes. Assume there are two traits $a = 1, 2$, each one of them dichotomous, as we have assumed so far. Assume that costs and benefits are additive and that there is no interaction between the two trais, that is *socialization* $c(\tau_1) + c(\tau_2)$ costs for the parents are and direct socialization benefits are $\varphi(\tau_1) + \varphi(\tau_2)$. Assume that switching costs are also additive for the child, $d(\tau_1) + d(\tau_2)$), and, to avoid multivariate distributions, that the two stochastic terms t_1 and t_2 are independent. Finally assume that the net benefits associated with each attitude are $\theta_a^{M*}(1 - q_a)V_a - \theta_a^{m*}q_a V_a - d(\tau_a) - t_a$, $a = 1, 2$ again assuming lack of interaction. In this simple case the conditions for τ_1 τ_2 are identical to those we have derived and simply need to be indexed by $a = 1, 2$. Of course the model would be more complicated if we allowed for cross affects across attitudes, but this is not central to our paper and we leave this extension for future research.

3 Measuring Cultural Attitudes and Defining Generations and Country of Origin in the GSS

Our measurement of cultural attitudes is based on the General Social Survey (GSS). We use multiple (21) waves of the GSS, starting in 1978 and ending in 2012. Each wave includes a core set of questions that remains in the survey in each year in which it was conducted. This core includes personal information such as age, income, region of residence, and family origin, as well as information on personal views on a variety of topics such as family values, gender equality, religious beliefs, sexual behavior, cooperation, role of government, etc.

One of the advantages of the GSS is that it allows us to analyze a wide variety of attitudes over several generations of immigrants. We have selected the attitudes for which data were available over a relatively long span of time, up to three decades (or slightly more). For ease of interpretation, we have grouped attitudes (or questions) into several broad categories. The list of categories, variables, and coding choices is provided in Table 1. Group A deals with views on social life, social interactions, and cooperation. It includes questions about trustworthiness (*trust)*, fairness (*fair)*, and helpfulness of others *(helpful)*. Group B includes attitudes towards government intervention – should the government redistribute income (*eqwlth*), provide a safety-net for the poor (*helppoor*) – and overall political views (*polviews*). Group C surveys different religious attitudes such as the frequency of religious services attendance (*attend*), the frequency of personal prayer (*pray*), the strength of religious affiliation with one's religion (*reliten*), the belief in afterlife (*postlife*), and the approval of prayer in public schools (*prayer*). Group D includes attitudes about family and children. Questions in this group elicit views on the degree of parental consent in teenage access to birth control (*pillok*), on the restrictiveness of divorce law (*divlaw*), on the co-residence of multiple generations (*aged*) – i.e. whether one approves of children living with their parents beyond a certain age, and on the frequency of evenings with relatives (*socrel*). Furthermore, this group includes views on preferred qualities in children such as obedience (*obey*) and independence (*thnkself*). Group E surveys views on gender roles. Participants in the GSS are asked to express their position concerning various views describing the role of women in the labor market, in politics, and at home: should a woman work even if the husband can support her (*fework*)?; can working mothers can have a warm relationship with their children (*fechild*)?; women should take care of running the home while men run the country (*fehome*); women are not suited for politics (*fepol*). Group F reports views on legalized abortion for any reason (*abany*) or restricted to cases of risk for mother's health, defects in the fetus, or rape (*abrisk*). Group G covers attitudes towards sexual behavior such as pre-marital sex (*premarsx*) and homosexual sex (*homosex*). Finally, Group H includes views on whether

social mobility is a result of hard work versus help or luck (*getahead*).

The premise of our study is that values and beliefs are formed in part as a result of one's upbringing, and in part through the influence of factors external to the family such as peers, institutions, and economic circumstances. Consequently, values and beliefs depend both on the country of origin of a person's ancestors, as well as on her generation (to be defined below). The origin is an important determinant of culture as it encodes the history of a people, encompassing past technological, economic, institutional and cultural environments. The generation of a person is important given that the temporal "distance" from the country of ancestry may be associated with a dilution of the original cultural trait because of exposure to a different set of economic and social opportunities, to different institutions, and cultural influences.

We consider the evolution of attitudes over multiple generations (up to the fourth). As a result, we are constrained by data availability to focus on immigrants to the US from European countries only. Furthermore, the small number of immigrants from some individual countries forces us to define "country of origin" grouping some countries. Table 2 lists the relevant country of origin as defined in this paper. In grouping countries under the same origin we have been guided by a combination of criteria. In the case of German (GER) and French (FRA) origin, we have used the common language shared by the countries in the group. In the case of Scandinavian (SCA), Southern European (S. EU), and Eastern European (E.EU) origin, we were guided by a relatively common cultural background in the respective region. The other single countries included are the United Kingdom (UK), Poland (POL), Ireland (IRE), and Italy (ITA).[19]

Finally, we follow much of the literature in our definition of the generation to which an immigrant belongs. We define a person to be a first-generation immigrant if he/she was born outside of the United States. Immigrants are defined to be second-generation if they are born in the US and at least one of their parents is born abroad, and third-generation if they are born in the US, all of their parents are born in the US and at least two of their grandparents are born abroad. Lastly, a person is said to be of forth-generation-or-more if he/she is born in the US, all his/her parents are born in the US and at most one grandparent is born abroad. With this definition the last category includes forth generation immigrants as well as people of a higher generation who still declare a specific European country of origin. In defining the country of origin we use the answer to the question, "*From what countries or part of the world did your ancestors come?*". If more than one country is indicated, the

---

[19]We exclude respondents of Russian origin from the analysis because their number is too small to constitute a separate group and because we did not want to create an excessively heterogeneous Eastern European group. We have included in Eastern European origin only Czechoslovakia and Hungary as possible country of origin.

respondent is asked "*Which one of these countries do you feel closer to?*". 79% percent of the sample can identify a main country of origin affiliation. The definition could be made tighter by concentrating on the respondents that indicate only one country. However, this reduces substantially the number of observations, as only 50% percent of the sample chooses just one country. We explore the consequences for our results of adopting a tighter definition of country in our robustness section (Section 7).

4   Recovering Country of Origin Effects for Different Generations, Dynasties and Time Periods.

Before discussing our approach to convergence in the next section, we will estimate, first, a Probit model to recover the effect of the country of origin on her/his values and beliefs for four generations of immigrants. Responses to each of the questions are therefore re-coded to produce a binary outcome (see Table 1). We will allow the effect of country of origin to depend upon generation, cohort (a commonly assumed interval between generations is 25 years), and period when the Survey was taken (pre or post 1995). The most general specification would allow for a quadruple interaction between the country of origin, the generation, the cohort, and the period. However the sample size of the GSS does not allow such an unrestricted specification even if we only distinguish between the decade of the survey and only between the pre-WWII and the post-WWII cohorts (see Table 3 for detailed data on trust and note the small cell sizes). A reasonable compromise is to allow for a triple interaction term between the country of origin, the generation, and the period (pre- and post-1990), and for an additive interaction term between the country of origin and the cohort (pre- and post-WWII). Formally, we estimate the following Probit model:

$$
\begin{aligned}
Pr(y_t^i = 1) \;\; = \;\; & \alpha + \sum_O \sum_G \sum_P \gamma_{o,g,p} \left(I_{(Origin^i=o)} \times I_{(Generation^i=g)} \times I_{(Period^i=p)} \right) \quad (10) \\
& + \;\; \sum_O \sum_C \delta_{o,c} \left(I_{(Origin^i=o)} \times I_{(Cohort^i=c)} \right) + \theta X_t^i
\end{aligned}
$$

where y_t^i takes the value of 1 if a certain event has occurred for individual i in wave t. $I_{(\,.\,)}$ are indicator functions that take the value of 1 if the condition in the subscript is satisfied, 0 otherwise. The sums are defined over four different sets: set O includes all possible countries of origin as defined in Table 1; set G includes each of the four possible generations of immigrants; set P includes two periods: the first one between the first GSS

17

wave in 1978 and 1994, and the second one from 1995 to 2012[20]; set C includes two groups of respondents – those born before WWII and those born afterwards. The restriction we are imposing relative to the most general model is that those born in the periods 1890-1914 and 1915-1939 share the same cohort effect, which is allowed to differ from the one characterizing those born in the periods 1940-1964 and 1965-2000. Moreover the additive separability assumption implies that, for a given country, the difference between any two generations does not depend upon the cohort effect. In all of the models we include a set of individual controls, X_t^i, for individual i in wave t. The controls allow us to identify the effect that the country-generation has on different attitudes separately from individual characteristics. The set of controls includes: income, education, mother's education, father's education, age, age^2, year of the survey dummy, gender, number of children, marital status, work status, religion, regional indicators, and urbanization indicators. Clearly variables such as income and education are endogenous and may also be related to the country of origin: immigrants and descendants of people from different countries of origin, may, for instance, attribute different importance to education. Yet, we prefer to define country of origin effects net of these factors, in an attempt to capture deeper cultural values and beliefs that go beyond personal characteristics and circumstances.[21] Consequently, the evolution of attitudes that this paper analyzes is not explained by changes in the level of eduction or income of immigrants over time.

The country-generation effect is based on the estimated value of $\beta_{o,g,c,p} = \gamma_{o,g,p} + \delta_{o,c}$. For each country of origin $o \in O$ we identify the attitudes of four generations ($G = 1, 2, 3, 4$). Furthermore, the origin-generation effects can move in a different way in each period. Note that our specification includes a survey-year effect common to all countries and generations. Since we need to exclude one survey-year effect per period to avoid perfect collinearity, we have done it in such a way that $\beta_{o,g,p}$ captures the country-generation effect in 1988 and 2004, approximately the middle of each one of our two periods. We should note that while we allow for full flexibility (by period) in the effects of origin and generation, we assume that the individual controls have the same impact on attitudes regardless of the period.

---

[20]For most attitudes this splits the survey waves in equally sized bins. *fework* and *fehome* are only surveyed in the 1980's and 1990's. For these two questions the two periods are each decade. Note also that we include in all specifications a common survey year effect.

[21]See also Algan and Cahuc (2007, 2010) and Giavazzi et al (2013). In our robustness section we also experiment with a more minimalist list of controls, including only age, age squared, year of the survey, gender, religion, regional indicators, and urbanization indicators.

5 Measuring Convergence in Cultural Attitudes

In this section we illustrate how we measure and assess whether or not there is convergence in the cultural attitudes of different generations of immigrants towards the norm set by the more established and dominant group, defined as the weighted average of all fourth generation country-of-origin effects. To avoid mixing dynasties of immigrants that started at different points in time, and hence brought with them different attitudes, we focus on four generations of the only full dynasty of immigrants observable in our data – the one that starts with the first generation arriving between 1890 and 1914 and ending with the last generation born after 1965. Note that we observe this complete dynasty both pre- and post-1995. This allows us to estimate country-generation effects that are period specific. For each generation in the dynasty we calculate the distance of values and beliefs estimated in equation (10) from the norm. We then summarize the information in an index of convergence that is robust to the presence of outliers. More specifically, for each of the countries of origin we define

$$\widetilde{\beta}_{(o,g,c,p)} = \beta_{(o,g,c,p)} - \beta_{(ave,4,c,p)} \tag{11}$$

where $\widetilde{\beta}_{(o,g,c,p)}$ represents the deviation of the country-origin effect, $\beta_{(o,g,c,p)}$ from the norm ($\beta's$ here denote estimated values). To capture the multi-cultural nature of the US, we assume that the "norm" is represented by the weighted average of the attitudes of fourth generation (or higher) European immigrants from all European countries in our sample, $\beta_{(ave,4,c,p)}$. The weights are the share of each country of ancestry in the fourth generation. To examine the experience of immigrants from different origins, we focus on the relationship between $\widetilde{\beta}_{(o,1,1890-1914,p)}$, the country o effect in period p for generation 1, cohort 1890-1914 and the corresponding country effect, in deviation from the norm, in the same period for generation 4, $\widetilde{\beta}_{(o,4,1890-1914,p)}$ (or for generation 2, $\widetilde{\beta}_{(o,2,1890-1914,p)}$). This methodology follows and extends the approach proposed by in Algan et al. (2012).[22] However, whereas they focus on the changes between the first and second generation, we analyze the process of attitudes' evolution over multiple generations. Most importantly, we keep the dynasty constant – only consider descendants of a "common original immigrant". This approach provides a rich, country-of-origin specific, picture of the process of cultural transmission, which is not driven by changes in the characteristics of immigrant groups over time.

One can use a graph to characterize the various patterns of convergence or non-convergence. Assume one plots the generation 1 deviation on the horizontal axis and the generation 4 deviation on the vertical axis (i.e. $\widetilde{\beta}_{(o,1,1890-1914,p)}$ and $\widetilde{\beta}_{(o,4,1890-1914,p)}$), either for each period or for the entire sample. We can segment the four quadrants in regions by drawing a 45 degree

---

[22]See, in particular, Figure 1.4 on p. 25.

line and a 135 degree line going through the origin (see Figure 2a). Focusing on Quadrant I, with positive initial and final deviations from the norm, points between the x-axis and the 45 degree line represent *monotonic convergence from above*, in the sense that the deviation is larger in generation 1 than in generation 4, while those between the line and the y-axis capture *monotonic divergence from above*. Points between the (continuation of the) 45 degree line and the x-axis in Quadrant III represent *monotonic converge from below,* while points between the 45 degree line and the y-axis *monotonic divergence form below*. In Quadrant II, in which the difference relative to the norm is first negative then positive, the 135 degree line separates points of *divergent leapfrogging* (above it) from those representing *convergent leapfrogging* (below the line). Similarly, in Quadrant IV, where the difference from the norm is first positive and then negative, points below the (continuation of the) 135 degree line are points of *divergent regression* and those above the line are points of *convergent regression*. This graph is useful to understand how the pattern of convergence differs for each cultural trait and each country.

We construct an overall index of convergence for each attitude by counting the proportion of countries (country-periods) that fall in the monotonic convergence from above or below, and in the convergent regression and leapfrogging regions. In other terms we are counting, in this case, the points *outside the hourglass* defined by the 45 and 135 degree lines through the origin that represent a decrease in the *absolute* value of the distance from the norm going from the 1st to the 4th (or 2nd) generation. We define the proportion of countries within these convergent region as π_{45}. Using π_{45} as a criterion for convergence has the advantage that it is not sensitive to the presence of outliers in the country-of-origin effects.

The drawback of π_{45} is that it may not be a strict enough criterion. In particular it does not allow to distinguish between slow-converging attitudes that feature country-generation effects close to the 45 degree line (or its reflection), and fast-converging ones clustered closer to the origin, along the y-axis. To this end, we define $\pi_{22.5}$ as the proportion of countries situated between the x-axis and the 22.5 degree line (or its reflection). In other terms, we are now squeezing the hour-glass from above and *count as convergent only those country-wave observations for which the absolute value of the distance from the norm in generation 1 has been cut at least in half by generation 4* (see Figure 2b). This is our preferred measure of convergence. One could use a somewhat tighter or looser criterion. However, as a robustness exercise, we will document in Section 5 that the ranking of attitudes obtained using the $\pi_{22.5}$ criterion is very similar to the one obtained when we require that the absolute value of the distance from the norm for generation 1 is cut by a quarter ($\pi_{33.75}$) or three quarters by generation 4 ($\pi_{11.25}$).

Note that this approach, particularly when using the π_{45} criterion, is related to β con-

vergence as the latter focuses on whether the slope of the regression line of $\widetilde{\beta}_{(o,4,1890-1914,p)}$ on $\widetilde{\beta}_{(o,1,1890-1914,p)}$ is between zero and one (so that the regression line lies in the *monotonic convergence* region). Yet, it is less parametric, less exposed to the influence of outliers, and it allows for convergent leapfrogging and convergent regression as well.

5.1 Other Measures of Convergence: Sigma Convergence

Another possible approach closely follows the growth literature on *sigma convergence*. In the original context, one calculates the standard deviation of income per capita across countries. If the standard deviation decreases over time, the countries are said to exhibit *sigma convergence*. The object of interest here is how the dispersion of attitudes across countries of origin varies across generations. Since we condition on a set of personal characteristics, we focus on conditional sigma convergence over generations.

More precisely, we can calculate for a given dynasty (the complete one we have focused on so far) the standard deviation (*s.d.*) of cultural attitudes for countries in set O for each $g \in G$ and each $p \in P$:

$$\sigma_{g,c,p} = \sqrt{\frac{1}{8} \sum_{o \in O} (\beta_{o,g,c,p} - \beta_{ave,g,c,p})^2} \tag{12}$$

where 8 is the number of countries-of-origin minus one. This gives us the *s.d.* of the attitudes of each generation of European immigrants for each of the two periods. As a summary statistic, we take the average of the *s.d.* over the periods to construct a measure of the dispersion of the attitudes of immigrants for each of the generations. We define this measure as $\tilde{\sigma}_{g,c} = \frac{1}{2} \sum_{p \in P} \sigma_{(g,p)}$. Higher values of $\tilde{\sigma}_{g,c}$ imply that there is a greater dispersion in the values or beliefs of immigrants across different origins, while lower values imply that attitudes do not vary a lot as a function of the country-of-origin, once we control for individual characteristics. Our goal is to investigate whether the rate of convergence differs across different attitudes within a dynasty. To this end we compute the changes in the *s.d.* of the attitudes within a dynasty:

$$\triangle \log \tilde{\sigma}_{g-g',c-c'} = log(\tilde{\sigma}_{g,c}) - log(\tilde{\sigma}_{g',c'}) \tag{13}$$

as a summary measure of the amount of convergence between generation g and g'. Even though the change in *s.d.* at each generation is important in understanding convergence, we focus on $\triangle \log \tilde{\sigma}_{1-4,c-c'}$ and on $\triangle \log \tilde{\sigma}_{1-2,c-c'}$, i.e. the change in the natural log of the dispersion of attitudes going from the first generation immigrants to the forth or from the first to the second (a positive number represents a decrease) for the dynasty that started in

21

$1890 - 1914$.[23] This measure provides a different criterion to distinguish between fast and slowly converging attitudes. Highly persistent attitudes should show a very modest change in dispersion for different generations and therefore should have a small log change in the standard deviation.

There are several differences between our preferred criterion and *sigma convergence*, including the choice of the reference point. Note that the standard deviation calculates the dispersion around the simple (*unweighted*) average for, say, generation 1, and then generation 4. With our convergence criterion, instead, the deviation is calculated in both cases relative to the *weighted* average of the attitudes of generation 4 (with weights equal to the frequency of descendants from a given country of origin). We will also present results based on the standard deviation across all *individuals* as opposed to countries (although individuals from the same country (and their descendants) will share the same value for attitudes). This generates a reference point equal to the weighted attitudes, based on the frequency of each ethnicity in a given generation, which is one step closer to the one used in our criterion (although the reference point continues to differ for generation 1 and generation 4, when using the change in the *s.d.*). Moreover, countries of origin with a larger number of immigrants are given more weight in the calculation.

Relying on the standard deviation as a measure of convergence has the drawback that it is sensitive to the presence of outliers. Moreover, the standard deviation can miss the clustering of cultural attitudes around more than one focal point (a phenomenon known as club convergence in the growth literature). For this reason we will focus on the hourglass criterion we have described before, but present some results on *sigma convergence* in the robustness section.[24]

---

[23]The cohort and the time period are properly adjusted in calculating the *s.d.* in order to follow the cohort starting in $1890 - 1914$.

[24]Another possibility is to calculate the F statistic on the equality of country-generation coefficients and study its evolution across generations for immigrants from different countries. The hypothesis we would like to test is:

$$H_0 : \beta_{o,g,c,p} = \beta_{o',g,c,p} = \beta_{o'',g,c,p} = ...$$

Notice that we keep g, c and p constant and test whether attitudes for each origin are the same at a given g, c and p. We can test this hypothesis using a standard F-test. However, the F-test is not likely to be very informative, or could be even misleading in our case, since the distribution of generations in our sample is heavily skewed in favor of the fourth generation. Hence the country effect for each origin will be more precisely estimated for the fourth generation relative to lower ones, resulting in $p-$values of the test that will tend to be comparatively smaller for the fourth generation, leading to a rejection of the null of equality of country effects, not necessarily because attitudes are quantitatively different, but simply as a result of the higher precision of the estimates. For this reason we do not focus on this approach here.

6 Results

In this section we present our results, using the definition of convergence based on the hourglass. We start by calculating the percentage of countries (more precisely: country-periods) that by generation four have cut in half the distance from the norm relative to generation one, within our complete dynasty, and compare it with the same percentage for the change occurring between generation one and two. We then ask whether and how convergence patterns vary by country of origin and we discuss evidence as to why that may be the case. After presenting the basic results, we will explore in the next section several robustness exercises and extensions, such as tightening or relaxing the convergence criterion, using a stricter definition of origin, considering only the country groupings with higher number of observations, and altering the set of controls in the Probit equation. In all cases our basic conclusions still hold. Finally, we shall also present some results using *sigma convergence* in attitudes and evidence on the changing strength of relationship between attitudes in the country of origin and immigrants' attitudes across generations.

In Table 4 we report the percentage of country-wave observations for which the initial gap has been cut at least in half ($\pi_{22.5}$ denotes this proportion). We do this for the 4th and 2nd generation for each country of origin. In the table we order the attitudes from the slowest moving (top rows) to the fastest moving (bottom rows), in terms of our convergence criterion. In Table 4 we also include the bootstrapped confidence intervals for the change between generation 4 and generation 2 in the proportion of convergent observations.[25] Table 5 presents the results by attitude and country. Attitudes are organized in categories which facilitates the assessment of convergence of *group* of attitudes. Moreover this table allows us to assess whether or not there are country specificities in the process of convergence.

A number of common patterns emerge. First, whether a cultural trait is persistent or not crucially depends upon whether one considers the change between the 1st and 2nd or the 1st and 4th generation. This point is very important: stopping at the 2nd generation, as the literature has typically done, would miss the greater convergence of a number of attitudes. These can be seen easily comparing the percentage of country-periods observations converging by generation 2, (column 1) and by generation 4 (column 2) reported in Table 4. In all cases but one we observe that the percentage of convergent observations by the 4th generation is larger than for the 2nd generation.

Note also that the 95% bootstrapped confidence intervals for the difference between the proportion of convergent observations for generation 4 and generation 2 allow us to reject the hypothesis of no change for 13 of the attitudes. Using the 90% confidence intervals, we

---

[25]The bootsrapped confidence intervals have been obtained using 1000 replications.

can, instead, reject the no change hypothesis for all but three of the attitudes. In short, limiting the analysis to the 2nd generation would bias the results in favor of the conclusion that cultural attitudes are persistent, while many of them display substantial and often significant further evolution from the 2nd to the 4th generation.

Focusing on the last column of Table 4, the ranking of *groups* of attitudes, from the slowest-moving to the fastest moving are: Abortion, Family, Government and Politics, Religion, and Gender Roles, Sexual Behavior, and Cooperation. In terms of individual attitudes, the slowest are those that describe family values and traditions: *obey, divlaw, socrel*, and *pillok* (the latter reflects the desired degree of parental control about contraception); and moral values concerning unrestricted abortion: *abany.* The next slowest group, in term of speed of convergence is mixed, containing religious values (*postlife*), views about the general role of women in society (*fehome:* the role of women is running the home, while men run the country), general political views, and views towards redistribution (*eqwlth* and *polviews* that distinguish conservative- from progressive-leaning individuals), and attitudes towards premarital sex – *premarsx.*[26]

The fastest moving attitude is *trust*, the key attitude capturing cooperation. Interestingly, *trust* is the slowest convergent attitude when one focuses on the change between the first and second generation.[27] In terms of speed of convergence, *trust* is followed by *thnkself* and *aged.* With regard to the latter, note that there is evidence that in the last decades there has been a return to a greater acceptance of sharing the home with grown children (see Fry (2014)). Among fast moving attitudes are also *helpful, homosex, and attend.* It is interesting to note the difference between *attend,* and other more personal religious attitudes, perhaps because *attend* captures the outward manifestation of religious feelings, more likely to be influenced by social pressure and prevalent norms concerning church going

For three out of four attitude towards women there is also quite fast convergence: this is true for *fework* (approval disapproval of women working even if the husband can support them), which is the question that addresses more directly the role of women in the labor market, the ability of a working mother to establish a warm relationship with her children

---

[26]Inglehart and Baker (2000), using the World Value Survey (WVS), suggest that economic development is associated with shifts away from absolute norms and values toward more rational, tolerant, trusting, and participatory ones. However, they argue that cultural change is path dependent and is affected by the broad religious and cultural heritage of a society. Notice that the values and attitudes that we identify as slow moving are considered by Inglehart and Baker (2000) as characteristics that distinguish preindustrial from industrial societies.

[27]The finding that *trust* and other attitudes toward cooperation do not converge, when one stops at the 2nd generation, while they do when one considers the change between the 1st and 4th generation, can be interpreted in the light of the Guiso, Sapienza and Zingales (2008) model of learning. Immigrants carry with them the level of trust of the country of origin and they transmit it to their children. Social interaction with the new environment changes their priors, but the adjustment may take more than two generations.

(fechild), and the suitability of women for politics *(fepol),* with 72% of the observations exhibiting a convergent pattern. Other attitudes towards religion (*pray* and *prayer*) occupy an intermediate rank in the speed distribution

In conclusion, the summary convergence rates for groups of attitudes and for individual attitudes suggest that the slower moving ones are those connected with family (and moral) values, for which vertical transmission is more likely, *ceteris paribus*, to be effective, as captured in our model by the importance for the parents of the child retaining the original family trait, or the cost for the child of abandoning it. The fastest changing attitudes, instead, are those related to cooperation: these are the attitudes for which social interactions matter more and the gain from converging to the norm is likely to be greater. Many contributions on cultural assimilation, such as Lazear (1999) and Konya (2005), on which the child identity choice of our model is built, emphasize that cultural assimilation is more likely the greater the gain from sharing a cultural trait with the majority and the greater the inefficiency of not doing so. Cavalli-Sforza (2001) also suggests that a trait is more likely to spread horizontally if it is beneficial (see also Tabellini 2008b).

Our simple model indeed captures and clarifies further this effect in a model that also includes the parents' socialization choice, as in Bisin and Verdier (2001): the range of initial size of the minority for which full assimilation is the steady state equilibrium *and* the speed of assimilation in each period indeed increases with the net transaction gain. This mechanism seems to be at work with many of our fast moving attitudes. For instance, there is much to be gained from sharing attitudes towards cooperation, as captured by trust, the fastest moving attitude: although there could be an initial gain from taking advantage of the trust of others, it is likely that the gain would be short term, followed by punishment if one is discovered cheating and not conforming to the social norm.[28] Moreover, the fast convergence of attitudes towards women work can be explained by the large economic gains from having women participating in market work. In addition, even though the value attached to the ability of children to be independent, *thnkself,* is a family attitude, it has a great impact on the ability to profit from interacting with other members of a society, like the US, that greatly values independence. It is, therefore, not surprising to see that it is the *only* fast moving family attitude. Finally, it is not surprising that belief in life after death is not fast converging, since such a belief (or absence of it) is not likely to confer a large transaction

---

[28]See Guiso, Herrera and Morelli (2013) on how cultural clashes between countries (including the dimension of trust) may lead to the choice of inefficient policies once the countries join a union, with an application to the policy response to the Greek crisis.. There is also an extensive literature on the role of schools in shaping attitudes towards cooperation. See, for instance, Algan, Cahuc, and Shleifer (2013) on the effect of teaching methods on beliefs underlining cooperation, and the references there on the effect of the quantity of schooling on social capital. Note that in deriving the country-generation effects we control for education of the respondent and of his/her parents.

advantage.

Our results have implications for the debate between the views that emphasize the assimilation of immigrants, versus those that highlight the preservation of a separate identity, and for the question whether the melting pot metaphor is accurate for European immigrants to the US. Indeed, by the fourth generation, the majority of cultural attitudes of descendants of European immigrants has converged, consistently with *Assimilation Theory*. However, contrary to the prediction of that theory and consistently with *Multiculturalism,* descendants of immigrants from different countries of ancestry have maintained over several generations a degree of cultural distinctiveness along some traits. In other terms, the temperature in the melting pot was hot, but not uniform throughout, as one would expect given the model of cultural transmission we have developed that emphasizes the fact that the speed of convergence is likely to differ across various attitudes.

With regard to gender role attitudes, those towards the role of women in the labor market converge uniformly faster than those that have to do with women's general role in society versus the home. This may be due to the complex forces acting on gender norms. Many authors (for instance, Goldin 2006 and Albanesi and Olivetti 2009) emphasize that technological innovations, structural change accompanying economic development, and medical improvements have had a powerful effect on gender roles. Alesina, Giuliano and Nunn (2013), instead, find a persistent impact of plough use as far back as a few millennia on gender norms today, even after accounting for the other factors mentioned above.[29]

The fact that attitudes towards premarital sex move do not move very fast when considering the 4th generation, is broadly consistent with the paper by Fernandez-Villaverde, Greenwood, and Guner (2014). Parents are altruistic, they worry about the consequences of unwanted pregnancies for their daughters and weigh the gain from direct socialization, that induces a higher level of shame for out-of-wedlock pregnancies, with the cost. Young women weigh the enjoyment of pre-marital sex against the risk of unwanted pregnancies. In equilibrium their overlapping generation model can rationalize the change in sexual practice and the delayed change in sexual mores as a result of improvements in the contraception technology.

The fast evolution of *attend* by the 4th generation is consistent with the results in Gruber and Hungerman (2008), who show that changes in shopping hours had a large impact on church attendance. They argue that this validates economic models of religiosity that highlight the importance of economic influences, such as the opportunity cost of church-going for religious participation. On the issue of redistribution, our results are broadly in line

---

[29]See also Fernandez (2013) for a model of belief formation in which it takes time for people to update their beliefs about the implications for children's welfare of women working outside the home.

with those Luttmer and Singhal (2011) who present evidence that such attitudes are rather "permanent", while they differ from those of Alesina and Fuchs-Schuendeln (2007), who find that this attitude can change rather rapidly.

It is an interesting question whether the probability that a cultural attitude converges or not depends upon how spread out is the distribution of the trait in the first generation. Here the arguments may go both ways: countries that are far away from the norm may find getting closer to it very advantageous; on the other hand, it may be difficult to do and this may foster an attempt to maintain a separate identity with regard to a particular trait. In our case the median initial standard deviation of the seven faster moving attitudes is larger than the median standard deviation of the slower moving ones (.42 versus .34). The difference in the standard deviation suggests that an initial large divergence of opinions may lead to faster convergence.

Are there interesting country specificities in the pattern of convergence? The bottom row of Table 5 reports the total number of convergent attitudes by country and the associated 95% bootstrapped confidence intervals.[30] The UK, Ireland, France, Germany, and Scandinavia are the country groupings with the highest number of cases in which attitudes converge over the entire sample period. Southern Europe, Poland, and Italy are at the opposite end. An interesting question is which factors explain the number of convergent attitudes by country. For instance, one would expect, on average, that in countries of origin in which the family is a weaker social institution, direct transmission would be relatively less important or effective. This is captured in our model by the parameters representing the benefit to the parent from the child maintaining the original trait and by the effectiveness of the socialization technology, embodied in the portion of the child switching cost related to the parent's educational efforts. Indeed there is a positive and significant correlation ($r = .70$) between the number of convergent attitudes and the country specific average of the family traits for the 1st generation (weighted by the size of the 1st generation in each period), taken as a proxy for the weakness of the family as an institution in the country of ancestry. However, this is not the only factor. The ability to learn English may also matter in acquiring other cultural traits. In our model this is captured by properties of the distribution of the stochastic component of the child switching costs. As a proxy for the ability to acquire English proficiency, we use the average, for each country of origin, of the number of words (out of ten) for which 1st generation immigrants can identify the meaning[31]. The correlation with the number of changing attitudes is also significant (the correlation coefficient is .80). Finally, the number of convergent attitudes by country is negatively correlated ($r = -.83$)

---

[30]We also report the confidence intervals for the proportion of of country-period convergent observations.

[31]GSS includes a series of questions that identify the respondent's vocabulary ability.

with a measure of residential segregation (See Borjas (1995)).[32] Although our model is silent on this issue as it does not include a residential choice, this is what one would expect since a neighborhood characterized by a high concentration of individuals from the same ancestry is likely to contribute to perpetuating the culture of the country of origin and to a slowing down of the process of cultural integration. All these results should be taken with a grain of salt given the small number of countries in our sample. The issue of how the composition of the neighborhood affects the evolution of attitudes at the individual level is a very important and interesting topic that we leave for future research.

7   Robustness and Extensions

In this section we discuss several robustness exercises. Are our results robust to a change in the tightness of the convergence criteria in terms of the nature of the convergence region? Are they robust to limiting the sample to individuals who declare a single ethnicity – rather than including also those that declare more than one ethnicity and then select the country of origin they feel "closer" to? Are they robust to dropping from the analysis country groups with fewer observations and to a different specification of the individual controls in the probit equation used to obtain the origin-dynasty-period specific generation effects?   The answer is *yes* to all these questions.

Moreover we discuss how the ranking of attitudes based on our convergence criteria compares to the one obtained using the concept of *sigma convergence.* Finally, in the last subsection we investigate an issue that is important, though not directly related to our main result. In the paper we have investigated the convergence to the dominant norm of attitudes across generations of immigrants, but how do such attitudes relate, for succeeding generations, to those of individuals who have not migrated and kept living in the country of origin? In particular, do we observe a weakening of the relationship as the temporal distance from the country of origin increases over generations?

These two issues are related, but different: convergence (non convergence) to the norm in the US does not imply nor is implied by an increasing distance (non increasing distance) from the culture of the country of origin. For instance, differences in attitudes across immigrants of distinct ethnicity (the issue investigated in this paper) could persist, and still the attitudes of immigrants could drift away from those prevailing in the country from which their ancestors came. Alternatively, one's cultural traits may remain close to those of the country of origin,

---

[32]More precisely, see Borjas (1995), Table 2. We use the measure based on the percentage of first and second generation immigrants in the neighborhood of the same ethnicity as a first-generation immigrants. Similar results are obtained using figures for the second generation.

but convergence to the norm across generations may be observed because values across countries become more similar. With this caveat in mind it is, however, interesting to present some evidence on the changing strength of the relationship between attitudes in the country of origin and attitudes of successive generations of immigrants.

7.1 Changing the Definition of the Convergence Region

In our baseline results we have measured convergence focusing, for each attitude, on the index we called $\pi_{22.5}$, which measures the proportion of countries that have cut the absolute value of the distance of generation 4 from the norm by at least half relative to generation 1. In Table A1 we present detailed results for the 4th generation based on less or more stringent criteria for convergence: reducing that distance by any amount (π_{45}), by at least a quarter ($\pi_{33.75}$), and by at least three quarters ($\pi_{11.25}$). The (Spearman) rank correlation coefficients between the proportions of converging country-wave observations (by generation 4) in the baseline and those using these alternative criteria are reported at the bottom of the table. Most of the correlation coefficients are very high (in excess of 80%). Even the lower ones, the one between $\pi_{11.25}$ and π_{45}, and between $\pi_{11.25}$ and $\pi_{33.75}$, are equal to .74 and .69, respectively. In other words the ranking of attitudes reported in our baseline results is very similar to that obtained when we require that the absolute value of the distance from the norm for generation 1 be cut by a quarter or three quarters by generation 4, and similar even when the absolute value of the distance is cut by any amount.

7.2 Using a Stricter Definition of Origin

In defining the country of origin we have used the answer to the question "*From what countries or part of the world did your ancestors come?*". If more than one country is indicated the respondent is asked, "*Which one of these countries do you feel closer to?*". We use the answer to this question to identify the country of origin. One may wonder what would happen if we use a stricter definition of origin, for instance limiting ourselves to those respondents that list only one country of origin. By using this criterion we loose a substantial fraction (37%) of the sample, since only 50% of the total sample indicate a single origin, while 79% indicate either a single origin or can identify a main country of origin, when more than one is indicated. In the restricted sample we essentially limit ourselves to those respondents whose parents, grandparents or grand-grand parents are more likely to belong to the same country of origin. In other terms, we select those individuals characterized by a smaller incidence of intermarriage in previous generations. We would expect in this case more persistence of attitudes and less convergence by the 4th generation. This is indeed the case for most attitudes

(see Table A2 and A3 that reproduces Table 4 and 5 for the sample of respondents indicating a single origin).[33] However, even in this case, we observe a substantial amount of convergence. Moreover, the Spearman rank correlation coefficient between the proportion of convergent country-wave observations (by generation 4) in the larger sample, and in the sample restricted to single origin is .6. Many of our conclusions in terms of relative rankings remain unchanged, such as those concerning the faster convergence of attitudes towards cooperation, and the slower convergence of deep religious attitudes, attitudes towards politics, and the general role of women in society. There are, however, some changes in the ranking, for instance concerning attitudes towards the role of effort versus luck as a determinant of success, and the attitudes towards sexual preferences (now converging more slowly).[34]

7.3 Eliminating Country Groupings with Fewer Observations Reducing the Set Controls in the Probit Equation

In Table A4 we perform two exercises: first we recalculate the percentage of convergent attitudes omitting the country groupings that have relatively small number of observations (Eastern Europe, Southern Europe); second, for the complete set of country grouping we limit the set of common controls to include only age, age squared, year of the survey dummy, gender, religion, regional indicators, and urbanization indicators (income, education, mother's education, father's education, number of children, marital status, and work status are excluded). Our conclusions are largely unchanged.[35]

7.4 Sigma Convergence

In Table 6 we investigate briefly how the dispersion of attitudes, as measured by the standard deviation changes when we consider generations further and further away from their ancestors

---

[33]As one would expect, the change between the 2nd and the 4th generation is significantly different from zero for a smaller number of attitudes, compared to that obtained for the larger sample (5 cases instead of 9, using the 95% bootstrapped confidence interval, and 12 instead of 18 cases for the 90% interval).

[34]In the sample restricted to respondents who list only one country of origin we are more likely to exclude instances of intermarriage in previous generations. A respondent's attitudes, however, could be influenced not only by having parents, or grandparents from different countries of origin, but also from her, or his being married to someone from a different ethnicity. In other words, what could matter is not only intermarriage in previous generations, but also intermarriage in the respondent's generation. Unfortunately data for intermarriage is only available for a few waves, those running from 1984 to 1994. When we consider these (limited) data we detect a positive correlation between one's decision to intermarry and her response "More then one" to the question "*From what countries or part of the world did your ancestors come?*". In other words, people whose ancestors are more likely to have intermarried, are also more likely to intermarry themselves. Thus, by increasing the likelihood of excluding the first group, as we do in this robustness exercise, we increase the probability of excluding the second as well.

[35]The Spearman rank correlation coefficients with our original ranking are .602 and .571, respectively.

(first generation immigrants). The results show the *log change in the average standard deviation* of the country-generation effects between generations 1 and 4, 1 and 2, 2 and 3, and 3 and 4 for each decade.

The main results in this paper position the groups of attitudes regarding Family, Abortion, and Government/Politics at the bottom end of convergence table across the generations of immigrants, while the attitudes about Cooperation are at the top. An interesting question here is whether we would have reached the same conclusions about the ranking of the *groups* of attitudes had we relied on the average change in dispersion over the generations. The rank correlation between the ordering of individual attitudes arising from the change in the log of standard deviation between generation 1 and 4, and the ordering given by $\pi_{22.5}$ is .49. The association is therefore positive, but the match in the two rankings is less than perfect. The ranking based on *sigma convergence* follows relatively closely the ranking based on the $\pi_{22.5}$ criterion for most attitudes in the fastest-converging group of Cooperation and for those in the two slow moving groups of Family and Abortion. However, there are also differences. For instance, attitudes towards redistribution (*eqwlth*) and children obedience *(obey)* converge faster under sigma convergence, while many of gender attitudes converge more slowly.

If we, instead, calculated the change in the standard deviation across individuals, not countries of origin, the rank correlation coefficients between the ordering of the attitudes according to our criterion and the change in the *s.d.* across individuals would be higher (.57), which is not surprising since there is less difference now in the reference point (see Table A.5).[36] In summary, the message coming from *sigma convergence*, is similar to the one coming from our criterion, but there are important exceptions.

7.5 Immigrants' Attitudes and Attitudes in the Country of Origin

As we have remarked in the introduction to this section, the relationship between the attitudes of succeeding generations of immigrants and those of individuals who have not migrated and kept living in the country of origin is related, but distinct from the main question investigated in this paper. A weakening (non-weakening) link with the original culture is neither a necessary nor sufficient condition for convergence (non-convergence) to the US prevailing norm. However, it is a very interesting issue and one the literature has often addressed.[37] We measure attitudes in the countries of origin using the European Value Survey (EVS) and the World Value Survey (WVS) which ask largely identical questions, some of which coincide or, more often, are similar to those asked in the GSS and used in our baseline results. There is a very close match for the questions regarding some of the cultural attitudes we have used in

---

[36]See the discussion in Section 5.1.
[37]See the discussion and references in the Introduction.

our empirical work, such as *trust, attend, postlife,* and *homosex,* and a fairly close (but not perfect) one for *pray, thnkself, obey, divlaw, fechild, fehome, fework,* and *abany* (See Table A6). The match is not close for the remaining attitudes we have examined. We have pooled the EVS and WVS data for all the relevant countries for the periods matching those defined in our baseline model. In the first stage, for each of these periods, we have estimated the coefficient of country-cohort specific dummies in a Probit model for each attitude, controlling for age, age squared, gender, and marital status.[38] In the second stage, we have then associated these country-cohort-specific effects with each individual GSS survey within the periods defined according to their cohort and country of origin. We have then estimated the Probit models for each cultural attitude on the GSS data, as we did before, but replacing the period-origin-generation and origin-cohort dummies with the time varying and country specific cultural proxy obtained in the first stage, interacted with generation dummies. We continue to control for all the individual specific variables used before and for common year effects. Essentially, we are assuming that the country of origin and time specific movements in culture for US immigrants are proportional to the cultural proxy estimated in the first stage, *and* that its effect may vary across generations. In particular, we are interested in assessing the significance of the generation-specific coefficients and whether the effect of the culture of origin decreases (or not) going from the 1st to the 4th generation.

The results are reported in Table 7. First, considering all attitudes, in seven out of twelve cases the coefficients of the culture of the country of origin for the first or second generation are significant. The association is closest for the attitudes that bear a close correspondence in the actual question surveyed. This emphasizes the fact that an imperfect match between the EVS-WVS and the GSS questions is likely to lead us to underestimating the strength of the association with the culture of the country of origin. Most interestingly, from our point of view, the value of the generation specific coefficients decreases in most cases as we go from the first to higher generations, implying a weakening of the effect of the culture of the country of origin, as one would expect. For instance, in the case of *trust,* the coefficient decreases from .48 to .23, .18, .011 as we go from the 1st to the 4th generation, and remains significant from the 1st to the 4th generations. A similar pattern is displayed by *attend, pray, thnkself, fechild,* and, to some extent, by *divlaw and homosex.* Five of the attitudes displaying this decaying pattern are in the top half of the distribution in terms of convergence speed, according to our preferred criterion.

---

[38]The results that follow are not sensitive to the choice of the controls.

8   Conclusions

Do cultural traits persist relatively unchanged over long periods of time or do they converge rather rapidly to the prevailing norm? In this paper we have presented new evidence on this question by analyzing cultural attitudes of different generations of European immigrants to the US and we have provided a simple model to shed light and interpret the evidence on the speed of convergence.

We show that persistence is not the same across cultural traits. Some traits converge slowly to the prevailing norm: this is the case, for instance, for some family and moral values, political views, and deep personal religious values. Other traits, instead, show a faster pace of convergence: this is true, for example, for attitudes towards cooperation (the trustworthiness and helpfulness of others), children's independence, and attitudes towards homosexuality and women's work. Slow-moving attitudes are mostly the ones for which direct transmission within the family is likely to be more important and effective, while fast-changing ones are those for which the benefits of assimilation derived in social interactions are greater and the switching costs smaller.

Importantly, we show that one would not come to these conclusions if one limited the analysis to just the first two generations of immigrants, as the literature has so far mostly done. Focusing only on the first two generations biases the conclusion in favor of persistence. Finally, we show that persistence is "culture specific" in the sense that the country from which one's ancestors came matters for the pattern of generational convergence (or lack thereof).

The implication of our results for the debate about the "melting pot" is that the latter was certainly at work for European immigrants for many-cultural traits and beliefs. However, descendants of immigrants from different countries of ancestry have maintained over several generations a degree of cultural distinctiveness along some other traits. Thus, the temperature in the melting pot was hot, but not uniform throughout, as suggested by our model that emphasizes how the effectiveness and importance of the socialization mechanism by parents and of the benefits from assimilation for their children is likely to vary across attitudes and countries. In this last respect, our results also show that the overall pattern of convergence differs across countries of origin in a manner largely consistent with the model predictions.

Finally, one may ask whether the evidence provided in this paper has any relevance for the question concerning the likelihood of success of reforms that change rules within a country. For instance, are such reforms doomed because a country's culture cannot be changed, or can they succeed because they can change cultural attitudes by altering incentives? This paper

neither intends to, nor can provide an answer to this question. What we have shown, however, is that the large shock represented by the new social and economic environment faced by immigrants can eventually lead to a change in many cultural traits. We have also found that the process of change depends upon cultural characteristics of the country of origin, so that any answer is likely to be country specific. These issues could be fertile ground for future research.

9 Tables and Figures

Table 1: List of Attitudes: Groups, Abbreviations, Descriptions

Group	Abbr.	Description
Group A – Cooperation	trust	can people be trusted or cannot be too careful? (y=1 for yes if $x_{GSS} = 1$)
	fair	will people take advantage of you? (y=1 for no if $x_{GSS} = 2$)
	helpful	people are mostly helpful or looking out for themselves (y=1 for yes if $x_{GSS} = 1$)
Group B – Government/Politics	eqwlth	government should equalize income between poor and rich (y=1 for yes if $x_{GSS} < 5$)
	helppoor	government should improve the standard of living of the poor (y=1 for yes if $x_{GSS} < 4$)
	polviews	political views (y=1 for liberal if $x_{GSS} < 4$)
Group C – Religion	attend	frequency of religious services attendance (y=1 for less often if $x_{GSS} < 4$)
	pray	frequency of prayer (y=1 for less often if $x_{GSS} > 4$)
	reliten	intensity of religious affiliation (y=1 for not strong if $x_{GSS} > 1$)
	postlife	belief in life after death (y=1 for no if $x_{GSS} = 2$)
	prayer	approval of prayer in public schools (y=1 for disapprove if $x_{GSS} = 2$)
Group D – Family	thnkself	independence of a child is highly important quality (y=1 for important if $x_{GSS} < 3$)
	obey	obedience of a child is a highly important quality (y=1 for not important if $x_{GSS} > 2$)
	pillok	birth control available to teenagers without parental consent (y=1 for ok if $x_{GSS} < 3$)
	aged	approval of sharing home with grown children (y=1 for disapproval if $x_{GSS} > 1$)
	divlaw	should divorce be easier? (y=1 for yes if $x_{GSS} = 1, 3$)
	socrel	frequency of social evenings with relatives (y=1 for less often if $x_{GSS} > 3$)
Group E – Gender Roles	fechild	working mother can have a good relationship with children (y=1 for yes if $x_{GSS} < 3$)
	fehome	women should take care of running homes (y=1 for no if $x_{GSS} = 2$)
	fepol	women not suited for politics (y=1 for no if $x_{GSS} = 2$)
	fework	women should work even if husband can support them (y=1 for yes if $x_{GSS} = 1$)
Group F – Abortion	abany	approval of abortion for any reason (y=1 for yes if $x_{GSS} = 1$)
	abrisk	approval of abortion for health/defect/rape reasons (y=1 for yes if $x_{GSS} = 0$)
Group G – Sexual Behavior	premarsx	approval of premarital sex (y=1 for yes if $x_{GSS} = 4$)
	homosex	approval of same-sex sexual relations (y=1 for yes if $x_{GSS} > 2$)
Group H – Mobility/Success	getahead	work, help, luck as a source of social mobility (y=1 for work if $x_{GSS} = 1$)

Notes: The responses from the survey have been recoded to have a binary outcome. y denotes the indicator variable in the Probit. Variable abrisk does not exist in the GSS. $abrisk = abhlth \cap abrape \cap abdefect$. x_{GSS} denotes the numerical value of the answers to the GSS questions. Some allow for a gradation of response.

Table 2: Country Groups

Country Group	Countries
German origin (GER)	Austria, Germany, Switzerland
Eastern European origin(E.EU)	Czechoslovakia, Hungary
Polish origin (POL)	Poland
Scandinavian origin (SCA)	Denmark, Finland, Sweden, Norway
French origin (FRA)	France, French Canada
Irish origin (IRE)	Ireland
Italian origin (ITA)	Italy
English origin (UK)	England, Wales, Scotland
South European origin (S.EU)	Spain, Portugal, Greece

Table 3: Number of Respondents for the Question on Trust by Period, Origin, and Generation

| | Cohort 1890-1939 | | | | | Cohort 1940+ | | | |
	Gen 1	Gen 2	Gen 3	Gen 4		Gen 1	Gen 2	Gen 3	Gen 4
GER	66	190	345	686		102	140	437	2,133
E.EU	15	85	29	15		10	31	126	98
POL	28	128	55	11		31	37	218	135
SCA	21	128	130	61		22	31	197	408
FRA	16	52	46	105		31	49	96	342
IRE	19	84	164	553		33	62	285	1,529
ITA	50	222	63	12		45	117	441	324
UK	81	145	166	1,132		94	127	212	1,947
S.EU	35	25	7	22		94	56	69	124

| | All | | | | | All, by Cohort | |
	Gen 1	Gen 2	Gen 3	Gen 4		Pre-1940	Post-1940
GER	168	330	782	2819	GER	1287	2812
E.EU	25	116	155	113	E.EU	144	265
POL	59	165	273	146	POL	222	421
SCA	43	159	327	469	SCA	340	658
FRA	47	101	142	447	FRA	219	518
IRE	52	146	449	2082	IRE	820	1909
ITA	95	339	504	336	ITA	347	927
UK	175	272	378	3079	UK	1524	2380
S.EU	129	81	76	146	S.EU	89	343

| | Period before 1995 | | | | | Period after 1995 | | | |
	Gen 1	Gen 2	Gen 3	Gen 4		Gen 1	Gen 2	Gen 3	Gen 4
GER	88	213	473	1502		80	119	309	1,321
E.EU	18	85	78	57		7	31	77	56
POL	31	124	162	63		28	42	111	83
SCA	23	111	189	235		20	48	139	234
FRA	25	63	85	239		22	39	57	211
IRE	23	75	255	1062		29	71	195	1,025
ITA	55	207	251	123		40	133	254	213
UK	102	171	228	1,671		73	102	150	1,417
S.EU	53	41	27	70		76	40	49	76

Table 4: Convergence by Cultural Attitude: Comparing Generation 2 and 4

	Gen 2 $\pi_{22.5}$	Gen 4 $\pi_{22.5}$	(Gen 4 $\pi_{22.5}$ - Gen 2 $\pi_{22.5}$)		
pillok	33%	28%	-6%	[.11,.56]	{.17,.50}
obey	39%	44%	6%	[.11,.56]	{.11,.50}
divlaw	28%	44%	17%	[.00,.50]	{.06,.50}
abany	39%	50%	11%	[-.06,.44]	{.00,.39}
socrel	50%	56%	6%	[-.06,.44]	{.00,.39}
eqwlth	44%	61%	17%	[-.06,.44]	{.00,.44}
polviews	33%	61%	28%	[.00,.44]	{.06,.44}
postlife	44%	61%	17%	[-.06,.39]	{.00,.39}
fehome	56%	61%	6%	[.00,.44]	{.06,.44}
premarsx	56%	61%	6%	[.00,.44]	{.00,.44}
pray	33%	67%	33%	[.00,.44]	{.00,.44}
prayer	33%	67%	33%	[.11,.56]	{.11,.53}
abrisk	33%	67%	33%	[-.06,.39]	{.00,.33}
getahead	44%	67%	22%	[-.11,.39]	{-.11,.33}
fair	39%	72%	33%	[.11,.56]	{.11,.56}
helppoor	56%	72%	17%	[.00,.50]	{.00,.44}
reliten	50%	72%	22%	[-.06,.44]	{.00,.39}
fechld	56%	72%	17%	[-.06,.44]	{.00,.39}
fepol	44%	72%	28%	[-.11,.33]	{-.06,.33}
fework	44%	72%	28%	[-.06,.44]	{.00,.39}
attend	56%	78%	22%	[-.11,.44]	{-.06,.39}
helpful	56%	83%	28%	[-.06,.44]	{.00,.44}
homosex	56%	83%	28%	[.06,.56]	{.11,.50}
thnkself	50%	89%	39%	[.00,.44]	{.00,.44}
aged	44%	89%	44%	[.00,.44]	{.00,.39}
trust	33%	94%	61%	[-.06,.44]	{.00,.39}

Notes: Percentage of country-wave observations for which the absolute value of the deviation from the norm has been cut at least in half between generation 1 and generation 2 or 4. 95% (90%) bootstrapped confidence interval for the test gen 4 $\pi_{22.5}$ = gen 2 $\pi_{22.5}$ in the square (curly) brackets.

Table 5: Convergence by Cultural Attitude and Country

		GER	E EU	POL	SCA	FRA	IRE	ITA	UK	S EU	Total	95% CI	Group Average
Group A - Cooperation	trust	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	94%	[.56,.89]	
	fair	0.5	0.5	0.5	0.5	1.0	1.0	1.0	1.0	0.5	72%	[.61,.89]	83%
	helpful	0.5	0.5	1.0	0.5	1.0	1.0	1.0	1.0	1.0	83%	[.56,.89]	
Group B - Government/Politics	eqwlth	0.5	0.5	0.5	1.0	1.0	1.0	0.5	0.5	0.0	61%	[.50,.83]	
	helppoor	0.5	1.0	0.5	1.0	0.5	1.0	1.0	1.0	0.0	72%	[.44,.78]	65%
	polviews	1.0	1.0	1.0	0.5	1.0	0.0	0.5	0.0	0.5	61%	[.44,.78]	
Group C - Religion	attend	1.0	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0	78%	[.50,.83]	
	pray	1.0	0.5	0.0	1.0	1.0	0.5	1.0	1.0	0.0	67%	[.50,.78]	
	reliten	1.0	0.5	0.5	1.0	0.5	1.0	0.5	1.0	0.5	72%	[.50,.83]	69%
	postlife	1.0	0.5	0.0	1.0	1.0	0.5	0.0	0.5	1.0	61%	[.44,.78]	
	prayer	0.0	1.0	1.0	0.0	1.0	0.5	0.5	1.0	1.0	67%	[.50,.83]	
Group D - Family	thnkself	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	89%	[.56,.89]	
	obey	0.5	0.5	0.0	1.0	0.0	1.0	0.5	0.5	0.0	44%	[.44,.78]	
	pillok	0.5	0.5	0.0	0.0	0.5	0.5	0.0	0.5	0.0	28%	[.33,.67]	59%
	aged	1.0	1.0	0.5	0.5	1.0	1.0	1.0	1.0	1.0	89%	[.56,.89]	
	divlaw	0.5	1.0	0.5	0.5	0.5	0.5	0.0	0.5	0.0	44%	[.44,.78]	
	socrel	1.0	0.5	0.0	1.0	0.5	0.5	0.5	1.0	0.0	56%	[.50,.78]	
Group E - Gender Roles	fechld	1.0	1.0	0.0	1.0	1.0	1.0	0.5	1.0	0.0	72%	[.50,.83]	
	fehome	1.0	0.5	0.5	0.0	1.0	1.0	0.0	1.0	0.5	61%	[.44,.78]	69%
	fepol	1.0	1.0	1.0	0.5	1.0	0.5	0.5	0.5	0.5	72%	[.44,.78]	
	fework	0.5	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	72%	[.33,.72]	
Group F - Abortion	abany	0.5	0.0	0.5	1.0	0.5	0.5	0.0	1.0	0.5	50%	[.44,.78]	
	abrisk	0.5	0.5	0.5	1.0	0.0	1.0	0.5	1.0	1.0	67%	[.44,.78]	58%
Group G - Sexual Behavior	premarsx	1.0	0.5	1.0	1.0	0.0	0.5	0.0	0.5	1.0	61%	[.50,.83]	
	homosex	0.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0	0.5	83%	[.56,.83]	72%
Group H - Mobility/Success	getahead	1.0	0.0	0.5	1.0	1.0	1.0	0.0	1.0	0.5	67%	[.47,.83]	67%
		75%	65%	52%	71%	77%	79%	52%	83%	50%			
		[.65,.85]	[.44,.65]	[.40,.63]	[.62,.81]	[.62,.81]	[.71,.87]	[.44,.63]	[.69,.87]	[.35,.52]			

Notes: The figures in the table represent the number of times we observe convergence over all time periods for each country and each attitude. Convergence is achieved when the absolute value of the deviation from the norm has been cut at least in half between generation 1 and generation 4 ($\pi_{22.5}$ criterion). Observations for *fehome* and *fework* span only two decades – 80s and 90s. The last row and column reports also the bootstrapped 95% confidence intervals in square brackets.

Table 6: Sigma Convergence

		$\triangle \log \tilde{\sigma}_{1-4}$	$\triangle \log \tilde{\sigma}_{1-2}$	$\triangle \log \tilde{\sigma}_{2-3}$	$\triangle \log \tilde{\sigma}_{3-4}$	Rank $\triangle \log \tilde{\sigma}_{1-4}$	Rank $\triangle \log \tilde{\sigma}_{1-2}$
Group A - Cooperation	trust	0.63	0.12	0.23	0.28	1	22
	fair	0.49	0.20	0.26	0.02	10	16
	helpful	0.54	0.21	0.39	-0.06	5	14
Group B - Government/Politics	eqwlth	0.54	0.17	0.32	0.06	4	19
	helppoor	0.44	0.40	-0.01	0.06	14	3
	polviews	0.40	0.27	0.00	0.12	17	7
Group C - Religion	attend	0.51	0.15	0.12	0.24	7	20
	pray	0.29	0.27	0.12	-0.09	22	8
	reliten	0.38	0.04	0.48	-0.14	19	24
	postlife	0.34	0.12	0.35	-0.14	21	21
	prayer	0.47	0.22	0.12	0.13	12	13
Group D - Family	thnkself	0.58	0.18	0.29	0.10	2	18
	obey	0.54	0.20	0.16	0.19	3	17
	pillok	0.13	0.25	0.03	-0.16	25	10
	aged	0.49	0.05	0.26	0.17	9	23
	divlaw	0.26	0.23	0.14	-0.11	23	11
	socrel	0.35	0.26	-0.04	0.13	20	9
Group E - Gender Roles	fechld	0.50	0.46	0.12	-0.08	8	1
	fehome	0.40	0.28	0.06	0.07	15	6
	fepol	0.40	0.33	0.01	0.06	18	4
	fework	0.02	-0.05	0.30	-0.23	26	26
Group F - Abortion	abany	0.26	0.30	0.11	-0.16	24	5
	abrisk	0.51	0.01	0.36	0.14	6	25
Group G - Sexual Behavior	premarsx	0.40	0.22	0.07	0.11	16	12
	homosex	0.47	0.45	0.10	-0.07	11	2
Group H - Mobility/Success	getahead	0.46	0.21	-0.12	0.37	13	15

Notes: $\triangle \log \tilde{\sigma}_{(g-g')} = log(\tilde{\sigma}_g) - log(\tilde{\sigma}_{g'})$, where $\tilde{\sigma}_g$ is the standard deviation, across countries of origin, of attitudes for generation g averaged across decades. We have omitted the cohort subscript for simplicity, but it should be understood that the cohort is adjusted in order to follow the dynasty that started in $1890 - 1914$. The table provides rankings of countries according to how much the standard deviation has been reduced between generation 1 and generation 4.

Table 7: The Impact of European Attitudes on US Immigrants across Generations

	$Cult_o \times I_{(g=1)}$	$Cult_o \times I_{(g=2)}$	$Cult_o \times I_{(g=3)}$	$Cult_o \times I_{(g=4)}$
trust	0.48	0.23	0.18	0.11
	(5.21)	(3.06)	(2.80)	(1.82)
attend	0.18	0.02	0.06	-0.01
	(4.12)	(0.54)	(2.73)	(-0.76)
pray	0.38	0.09	0.02	-0.02
	(3.81)	(1.27)	(0.35)	(-0.62)
postlife	0.07	-0.13	0.18	0.00
	(0.39)	(-1.24)	(2.57)	(-0.08)
thnkself	0.65	0.24	-0.06	0.02
	(4.15)	(2.19)	(-0.66)	(0.38)
obey	-0.15	0.13	0.05	-0.17
	(-0.77)	(0.74)	(0.47)	(-3.16)
divlaw	0.09	0.16	0.02	-0.01
	(0.99)	(2.13)	(0.35)	(-0.15)
fechild	0.28	0.09	0.05	0.06
	(2.25)	(1.17)	(0.81)	(1.32)
fehome	-0.19	0.10	0.14	0.03
	(-1.56)	(0.97)	(1.40)	(0.40)
fework	0.09	-0.02	0.02	-0.03
	(1.05)	(-0.25)	(0.28)	(-0.61)
abany	-0.01	-0.01	0.01	0.03
	(-0.13)	(-0.23)	(0.28)	(0.88)
homosex	0.12	0.12	-0.02	0.07
	(1.38)	(1.81)	(-0.42)	(1.50)

Notes: $Cult_o$ denotes the culture of the country of origin. Generation specific coefficients are reported. z statistics in parentheses.

Figure 1a: Dynamics and Equilibria: Full Assimilation and Non-assimilation Equilibrium

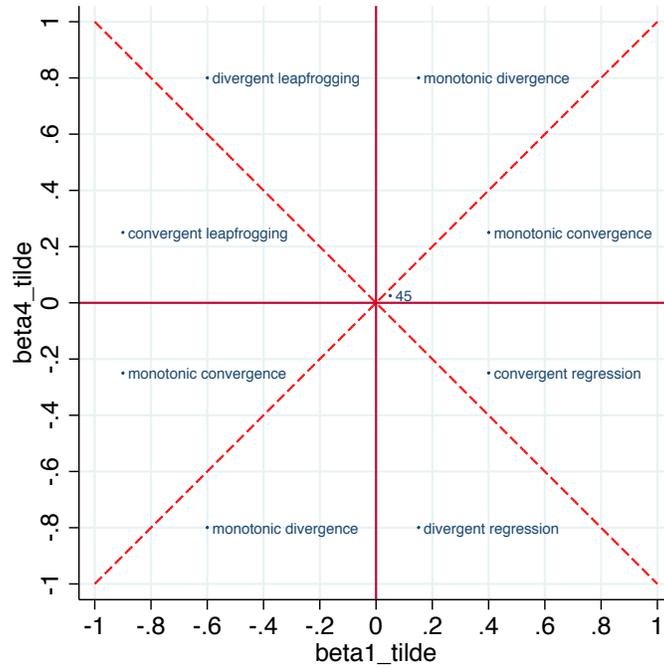Figure 1b: Dynamics and Equilibria: Only Full Assimilation Equilibrium

41

Figure 2a: Generational Convergence and Non-convergence Regions (by type)
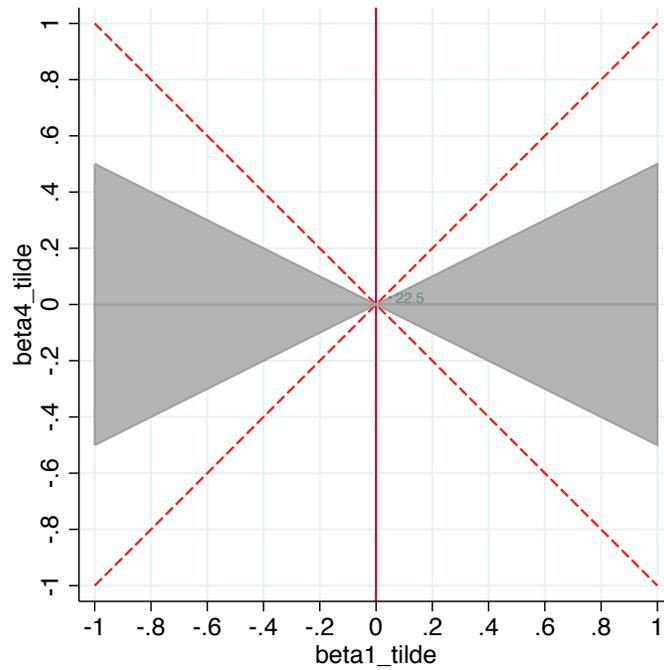
Figure 2b: Convergence Region Implied by the 22.5^o Cut-off Rule

Appendix 1

Table A1: Sensitivity of Convergence Across Different Criteria

π_{45}		$\pi_{33.75}$		$\pi_{22.5}$		$\pi_{11.25}$	
pillok	50%	pillok	50%	pillok	28%	pillok	22%
abany	67%	postlife	61%	obey	44%	divlaw	28%
pray	72%	divlaw	61%	divlaw	44%	abany	28%
divlaw	72%	socrel	61%	abany	50%	polviews	33%
socrel	72%	abany	61%	socrel	56%	obey	33%
postlife	78%	pray	67%	eqwlth	61%	fehome	33%
obey	78%	obey	67%	polviews	61%	prayer	39%
fehome	78%	fework	72%	postlife	61%	socrel	39%
fework	78%	eqwlth	78%	fehome	61%	getahead	39%
abrisk	78%	polviews	78%	premarsx	61%	eqwlth	44%
eqwlth	83%	reliten	78%	pray	67%	postlife	44%
polviews	83%	fechld	78%	prayer	67%	abrisk	44%
reliten	83%	fehome	78%	abrisk	67%	pray	50%
prayer	83%	fepol	78%	getahead	67%	fechld	50%
premarsx	83%	abrisk	78%	fair	72%	fepol	50%
homosex	83%	premarsx	78%	helppoor	72%	premarsx	50%
getahead	83%	fair	83%	reliten	72%	helpful	56%
fair	89%	helpful	83%	fechld	72%	attend	56%
helpful	89%	prayer	83%	fepol	72%	reliten	56%
helppoor	89%	homosex	83%	fework	72%	homosex	56%
aged	89%	getahead	83%	attend	78%	fework	61%
fechld	89%	helppoor	89%	helpful	83%	trust	67%
trust	94%	thnkself	89%	homosex	83%	fair	67%
attend	94%	aged	89%	thnkself	89%	helppoor	67%
thnkself	94%	trust	94%	aged	89%	thnkself	72%
fepol	94%	attend	94%	trust	94%	aged	72%

Rank Correlation

	π_{45}	$\pi_{33.75}$	$\pi_{22.5}$	$\pi_{11.25}$
π_{45}	1.00			
$\pi_{33.75}$	0.89	1.00		
$\pi_{22.5}$	0.82	0.80	1.00	
$\pi_{11.25}$	0.74	0.69	0.92	1.00

Notes: The table shows different orderings of the speed of convergence according to the percentage of country-wave observations for which the absolute value of the deviation from the norm in the first generation has been cut by any amount (π_{45}), by a quarter ($\pi_{33.75}$), by half ($\pi_{22.5}$), and by three quarters ($\pi_{11.25}$) by generation 4. The second table lists the rank correlations between the different convergence criteria.

Table A2: Single Origin: Convergence by Cultural Attitude: Comparing Generation 2 and 4

	Gen 2 $\pi_{22.5}$	Gen 4 $\pi_{22.5}$	(Gen 4 $\pi_{22.5}$ - Gen 2 $\pi_{22.5}$)
polviews	28%	28%	0%
eqwlth	44%	44%	0%
fehome	44%	44%	0%
fepol	28%	44%	17%
abrisk	28%	44%	17%
socrel	44%	50%	6%
fework	28%	50%	22%
abany	33%	50%	17%
fair	44%	56%	11%
prayer	39%	56%	17%
pillok	33%	56%	22%
divlaw	39%	56%	17%
obey	39%	61%	22%
premarsx	44%	61%	17%
helppoor	44%	67%	22%
pray	56%	67%	11%
postlife	56%	67%	11%
aged	50%	67%	17%
helpful	28%	72%	44%
reliten	61%	72%	11%
thnkself	56%	72%	17%
fechld	56%	72%	17%
homosex	39%	72%	33%
getahead	56%	72%	17%
attend	28%	78%	50%
trust	39%	83%	44%

Notes: This table replicates Table 4 using only respondents with one listed country of origin. Percentage of country-wave observations for which the absolute value of the deviation from the norm has been cut at least in half between generation 1 and generation 2 or 4.

Table A3: Single Origin: Convergence by Cultural Attitude and Country

		GER	E EU	POL	SCA	FRA	IRE	ITA	UK	S EU	Total	Group Average
Group A - Cooperation	trust	1.0	1.0	1.0	0.5	1.0	1.0	0.5	0.5	1.0	83%	
	fair	0.5	0.0	0.5	0.5	1.0	1.0	0.5	0.5	0.5	56%	70%
	helpful	1.0	0.5	0.5	1.0	1.0	1.0	1.0	0.5	0.0	72%	
Group B - Government/Politics	eqwlth	0.5	0.0	0.5	1.0	1.0	0.0	0.5	0.5	0.0	44%	
	helppoor	1.0	0.5	1.0	0.5	1.0	1.0	0.5	0.5	0.0	67%	46%
	polviews	1.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	28%	
Group C - Religion	attend	1.0	0.0	0.5	1.0	1.0	1.0	1.0	1.0	0.5	78%	
	pray	0.5	0.5	0.0	1.0	1.0	1.0	0.5	1.0	0.5	67%	
	reliten	1.0	0.5	0.5	1.0	1.0	1.0	0.5	1.0	0.0	72%	68%
	postlife	1.0	1.0	0.0	1.0	1.0	0.5	0.0	0.5	1.0	67%	
	prayer	0.0	1.0	0.5	0.0	1.0	0.5	1.0	0.0	1.0	56%	
Group D - Family	thnkself	0.5	1.0	1.0	1.0	0.5	1.0	0.5	1.0	0.0	72%	
	obey	1.0	0.5	0.5	1.0	0.0	1.0	0.5	1.0	0.0	61%	
	pillok	0.5	0.5	0.5	1.0	0.5	1.0	0.0	0.5	0.5	56%	60%
	aged	1.0	1.0	0.5	0.5	0.5	1.0	0.5	0.5	0.5	67%	
	divlaw	0.5	1.0	0.5	0.5	1.0	0.5	0.5	0.5	0.0	56%	
	socrel	0.5	0.0	0.5	1.0	0.5	0.5	0.5	1.0	0.0	50%	
Group E - Gender Roles	fechld	0.5	1.0	0.5	1.0	1.0	1.0	0.5	1.0	0.0	72%	
	fehome	0.5	1.0	0.5	0.5	0.5	0.5	0.0	0.0	0.5	44%	53%
	fepol	0.5	0.5	0.0	0.5	0.5	0.5	0.0	1.0	0.5	44%	
	fework	1.0	0.0	0.0	0.5	0.5	1.0	0.5	1.0	0.0	50%	
Group F - Abortion	abany	0.5	0.5	0.0	1.0	1.0	0.5	0.0	1.0	0.0	50%	47%
	abrisk	0.5	0.0	0.0	0.0	0.5	1.0	0.5	1.0	0.5	44%	
Group G - Sexual Behavior	premarsx	1.0	0.0	1.0	0.5	0.5	1.0	0.5	0.5	0.5	61%	67%
	homosex	1.0	0.5	0.5	0.5	1.0	1.0	0.5	1.0	0.5	72%	
Group H - Mobility/Success	getahead	1.0	0.5	1.0	0.5	1.0	1.0	0.0	1.0	0.5	72%	72%
		73%	50%	46%	67%	77%	81%	44%	69%	33%		

Notes: This table replicates Table 5 using only respondents with one listed country of origin. The figures in the table represent the number of times we observe convergence over all time periods for each country and each attitude. Convergence is achieved when the absolute value of the deviation from the norm has been cut at least in half between generation 1 and generation 4 ($\pi_{22.5}$ criterion). Observations for *fehome* and *fework* span only two decades – 80s and 90s.

Table A4: Removing E. EU. and S. EU. and Limiting Individual Controls: Convergence by Cultural Attitude and Country

		GER	E EU	POL	SCA	FRA	IRE	ITA	UK	S EU	Total	Group Average
Group A - Cooperation	trust	0.5		1.0	1.0	1.0	1.0	0.5	0.5		79%	
	fair	0.5		0.5	0.5	1.0	1.0	1.0	0.5		71%	79%
	helpful	0.5		1.0	0.5	1.0	1.0	1.0	1.0		86%	
Group B - Government/Politics	eqwlth	0.5		0.5	1.0	0.5	1.0	0.5	0.0		57%	
	helppoor	1.0		0.5	1.0	0.5	0.5	1.0	1.0		79%	67%
	polviews	1.0		0.5	0.5	1.0	0.0	1.0	0.5		64%	
Group C - Religion	attend	1.0		0.5	0.5	0.5	1.0	1.0	1.0		79%	
	pray	1.0		0.0	1.0	1.0	0.5	1.0	1.0		79%	
	reliten	0.5		0.5	1.0	1.0	1.0	1.0	0.5		79%	67%
	postlife	1.0		0.5	0.5	1.0	1.0	0.0	0.0		57%	
	prayer	0.0		0.5	0.0	1.0	0.5	0.5	0.5		43%	
Group D - Family	thnkself	0.5		1.0	0.0	0.5	1.0	1.0	0.5		64%	
	obey	0.5		0.5	1.0	1.0	1.0	1.0	0.5		79%	
	pillok	0.5		0.0	0.0	0.5	0.5	0.0	0.5		29%	
	aged	0.5		0.0	0.5	1.0	1.0	0.5	1.0		64%	57%
	divlaw	0.5		0.5	0.5	0.0	1.0	0.0	1.0		50%	
	socrel	0.5		0.0	1.0	0.5	0.5	0.5	1.0		57%	
Group E - Gender Roles	fechld	1.0		0.5	1.0	0.5	1.0	0.5	0.5		71%	
	fehome	0.5		0.5	0.0	1.0	1.0	0.0	0.5		50%	64%
	fepol	1.0		1.0	0.5	1.0	0.5	0.5	0.0		64%	
	fework	0.5		0.0	1.0	1.0	0.5	1.0	1.0		71%	
Group F - Abortion	abany	0.0		0.0	1.0	0.5	1.0	0.5	1.0		57%	61%
	abrisk	0.5		0.5	1.0	0.5	1.0	0.5	0.5		64%	
Group G - Sexual Behavior	premarsx	1.0		1.0	1.0	0.0	1.0	0.0	0.5		64%	75%
	homosex	1.0		1.0	1.0	1.0	0.5	0.5	1.0		86%	
Group H - Mobility/Success	getahead	0.5		1.0	1.0	0.5	1.0	0.5	1.0		79%	79%
		0.6		0.5	0.7	0.7	0.8	0.6	0.7			
Limited Controls												
Group A - Cooperation	trust	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	89%	
	fair	1.0	1.0	1.0	0.5	1.0	1.0	1.0	0.0	0.5	78%	74%
	helpful	1.0	1.0	0.5	0.0	1.0	0.5	1.0	0.0	0.0	56%	
Group B - Government/Politics	eqwlth	1.0	0.5	0.5	1.0	0.5	0.0	1.0	0.5	0.0	56%	
	helppoor	0.5	1.0	0.5	1.0	0.5	1.0	1.0	0.5	0.5	72%	61%
	polviews	1.0	0.0	1.0	0.5	1.0	0.5	0.0	0.5	0.5	56%	
Group C - Religion	attend	1.0	0.5	1.0	0.5	0.5	0.5	0.0	0.5	0.5	56%	
	pray	0.5	0.0	0.0	1.0	0.5	1.0	0.5	1.0	0.0	50%	
	reliten	1.0	0.5	1.0	1.0	0.0	1.0	0.5	0.5	0.5	67%	57%
	postlife	1.0	0.5	0.0	1.0	1.0	0.5	1.0	1.0	1.0	78%	
	prayer	0.0	0.5	0.0	0.5	0.5	0.5	1.0	0.0	0.0	33%	
Group D - Family	thnkself	1.0	0.5	1.0	1.0	0.5	1.0	1.0	0.5	1.0	83%	
	obey	0.5	0.5	0.5	1.0	0.5	1.0	1.0	1.0	0.0	67%	
	pillok	1.0	0.5	0.0	0.5	0.5	1.0	0.5	0.5	0.0	50%	
	aged	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0	89%	66%
	divlaw	0.0	0.5	0.5	0.5	0.5	1.0	0.5	0.5	0.0	44%	
	socrel	1.0	0.5	0.5	1.0	0.5	1.0	0.5	0.5	0.0	61%	
Group E - Gender Roles	fechld	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	89%	
	fehome	1.0	0.5	0.5	0.0	1.0	0.5	1.0	1.0	0.5	67%	69%
	fepol	1.0	1.0	1.0	1.0	1.0	0.0	0.5	0.5	0.0	67%	
	fework	1.0	0.5	0.5	0.0	1.0	0.5	1.0	0.5	0.0	56%	
Group F - Abortion	abany	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	56%	58%
	abrisk	0.5	0.5	0.0	0.5	1.0	1.0	0.5	1.0	0.5	61%	
Group G - Sexual Behavior	premarsx	1.0	0.5	1.0	1.0	0.0	0.5	0.5	0.5	0.5	61%	69%
	homosex	1.0	0.5	0.5	1.0	1.0	1.0	1.0	0.5	0.5	78%	
Group H - Mobility/Success	getahead	1.0	0.0	0.5	1.0	0.5	1.0	0.0	1.0	0.0	56%	56%
		0.8	0.0	0.6	0.8	0.7	0.7	0.8	0.6	0.0		

Notes: This table replicates Table 5 without respondents from E.EU. and S. EU.. The figures in the table represent the number of times we observe convergence over all time periods for each country and each attitude. Convergence is achieved when the absolute value of the deviation from the norm has been cut at least in half between generation 1 and generation 4 ($\pi_{22.5}$ criterion). Observations for *fehome* and *fework* span only two decades – 80s and 90s.

Table A5: Sigma Convergence (Across Individuals)

		$\triangle \log \tilde{\sigma}_{1-4}$	$\triangle \log \tilde{\sigma}_{1-2}$	$\triangle \log \tilde{\sigma}_{2-3}$	$\triangle \log \tilde{\sigma}_{3-4}$	Rank $\triangle \log \tilde{\sigma}_{1-4}$	Rank $\triangle \log \tilde{\sigma}_{1-2}$
	trust	0.64	0.21	0.10	0.32	4	19
Group A - Cooperation	fair	0.47	0.17	0.18	0.11	19	22
	helpful	0.61	0.28	0.23	0.10	6	13
	eqwlth	0.41	0.28	0.15	-0.01	22	14
Group B - Government	helppoor	0.55	0.46	-0.06	0.14	13	2
	polviews	0.38	0.32	-0.02	0.08	24	8
	attend	0.53	0.41	-0.01	0.13	16	4
	pray	0.55	0.09	0.38	0.09	10	26
Group C - Religion	reliten	0.55	0.36	0.18	0.01	11	6
	postlife	0.53	0.18	0.26	0.09	15	20
	prayer	0.42	0.22	0.05	0.15	21	18
	thnkself	0.71	0.16	0.34	0.21	3	24
	obey	0.51	0.17	0.13	0.22	17	23
Group D - Family	pillok	0.34	0.27	0.08	-0.01	25	15
	aged	0.81	0.18	0.36	0.28	1	21
	divlaw	0.31	0.30	-0.09	0.11	26	10
	socrel	0.45	0.32	-0.07	0.20	20	7
	fechld	0.62	0.29	0.08	0.25	5	11
Group E - Gender Roles	fehome	0.53	0.27	0.07	0.19	14	16
	fepol	0.50	0.42	-0.09	0.17	18	3
	fework	0.40	0.11	0.22	0.07	23	25
Group F - Abortion	abany	0.55	0.49	0.09	-0.03	12	1
	abrisk	0.71	0.32	0.18	0.21	2	9
Group G - Sexual Behavior	premarsx	0.58	0.39	0.02	0.18	8	5
	homosex	0.56	0.29	0.26	0.01	9	12
Group H - Mobility/Success	getahead	0.60	0.27	-0.07	0.40	7	17

Notes: $\triangle \log \tilde{\sigma}_{(g-g')} = log(\tilde{\sigma}_g) - log(\tilde{\sigma}_{g'})$, where $\tilde{\sigma}_g$ is the standard deviation, across individual, of attitudes for generation g averaged across decades. We have omitted the cohort subscript for simplicity, but it should be understood that the cohort is adjusted in order to follow the dynasty that started in 1890 – 1914. The table provides rankings of countries according to how much the standard deviation has been reduced between generation 1 and generation 4.

Table A6: List of Matched Attitudes between the General Social Survey (GSS) and the European Values Survey/World Values Survey (EVS/WVS)

GSS	EVS/WVS Question Number	Description of EVS variable
trust	a165	Most people can be trusted (y=1 for yes if $x_{EVS} = 1$)
attend	f028	How often do you attend religious services (y=1 for less often if $x_{EVS} > 3$)
pray	f063	How important is God in your life (y=1 for less important if $x_{EVS} < 7$)
postlife	f051	Believe in life after death (y=1 for no if $x_{EVS} = 0$)
thnkself	a029	Important child qualities: independence (y=1 for important if $x_{EVS} = 1$)
obey	a042	Important child qualities: obedience (y=1 for not important if $x_{EVS} = 0$)
divlaw	f121	Justifiable: divorce (y=1 for yes if $x_{EVS} > 3$)
fechild	d061	Pre-school child suffers with working mother (y=1 for yes if $x_{EVS} > 2$)
fehome	d057	Being a housewife just as fulfilling (y=1 for no if $x_{EVS} > 1$)
fework	d058	Husband and wife should both contribute to income (y=1 for yes if $x_{EVS} = 1$)
abany	f120	Justifiable: abortion (y=1 for yes if $x_{EVS} = 10$)
homosex	f118	Justifiable: homosexuality (y=1 for yes if $x_{EVS} > 7$)

Notes: The responses from the EVS/WVS have been recoded to have a binary outcome. We indicate the correspondence between GSS and EVS/WVS and the original value(s) from the EVS/WVS that are matched with the recoded GSS variables. y denotes the indicator variable in the first stage Probit. x_{EVS} denotes the answer number to the EVS/WVS questions.

Appendix 2: Phase Diagram and Location of $\tilde{q}$

Re-writing equation (8) in the text, the dynamics of assimilation is determined by:

$$q_{t+1} = \left(1 - \frac{(1-q_t)\theta^M V - q_t\theta^m V - d\left(\frac{\varphi_0 - \beta[(1-q_t)\theta^M V - q_t\theta^m V - \underline{t}]}{\frac{c(\bar{t}-\underline{t})}{d} - \beta d}\right) - \underline{t}}{\bar{t} - \underline{t}}\right)q_t \qquad (A1)$$

$$\frac{dq_{t+1}}{dq_t} = \left(1 - \frac{(1-q_t)\theta^M V - q_t\theta^m V - d\left(\frac{\varphi_0 - \beta[(1-q_t)\theta^M V - q_t\theta^m V - \underline{t}]}{\frac{c(\bar{t}-\underline{t})}{d} - \beta d}\right) - \underline{t}}{\bar{t} - \underline{t}}\right) + \left(\frac{\theta^M V + \theta^m V + \beta d\frac{[\theta^M V - q_t\theta^m V]}{\frac{c(\bar{t}-\underline{t})}{d} - \beta d}}{\bar{t} - \underline{t}}t\right)q_t > 0$$

$$(A2)$$

$$\frac{d^2 q_{t+1}}{dq_t^2} = \frac{2c(\theta^M V + \theta^m V)}{c(\bar{t} - \underline{t}) - \beta d^2} > 0 \qquad (A3)$$

Therefore the relationship between q_{t+1} and q_t (the phase line) starts at zero and it is increasing and convex. It intersects the 45 degree line also at $\tilde{q}$, where $\tilde{q}$ satisfies $(1-\tilde{q})\theta^M V - \tilde{q}V\theta^m V - d\tau^* = \underline{t}$,so that there are no gain from assimilation and $G\left((1-\tilde{q})\theta^M V - \tilde{q}\theta^m V - d\tau^*\right) = 0$. Our parametrization implies:

$$\tilde{q} = \frac{\theta^M V - \frac{\varphi_0 d^2}{c(\bar{t}-\underline{t})} - \underline{t}}{\theta^M V + \theta^m V} \qquad (A4)$$

The numerator of the first line on the right hand side of (A4) is strictly positive, because we assume that $(1 - q)\theta^M V - q\theta^m V - d\tau^* \geq \underline{t}$ which implies that $(1 - q)\theta^M V - q\theta^m V - \frac{\varphi_0 d^2}{c(\bar{t}-\underline{t})} - \underline{t} \geq 0$. Hence $\tilde{q} > 0$. The numerator and denominator of (A4) also imply that $\tilde{q} < 1$. Therefore, $0 < \tilde{q} < 1$ as claimed in the text.

References

[1] Alba, Richard D. (1985)."Italian Americans: Into the Twilight of Ethnicity." Prentice Hall, Englewood Cliffs.

[2] Albanesi, Stefania and Claudia Olivetti (2009). "Gender Roles and Medical Progress," NBER Working Papers No. 14873.

[3] Akerlof, George A. and Rachel E. Kranton (2000). "Economics and Identity." *Quarterly Journal of Economics,* 115(3): 715–753.

[4] Alesina, Alberto, Paola Giuliano, and Nathan Nunn (2013). "On the Origins of Gender Roles: Women and the Plough."textit Quarterly Journal of Economics, 128(2): 469–530.

[5] Alesina, Alberto and Paola Giuliano (2013). "Culture and Institutions." NBER Working Papers No. 19750.

[6] Alesina, Alberto and Nicola Fuchs-Schuendeln (2007). "Good bye Lenin (or not?): The Effect of Communism on People's Preferences."textitThe American Economic Review 97(4): 1507-1528.

[7] Algan, Yann and Pierre Cahuc (2007). "The Roots of Low European Employment: Family Culture?" in *NBER International Seminar on Macroeconomics 2005*, MIT Press, 65–109.

[8] Algan, Yann and Pierre Cahuc (2010). "Inherited Trust and Growth." *American Economic Review*, 100(5): 2060–2092.

[9] Algan, Yann, Pierre Cahuc, and Andrei Shleifer (2013). "Teaching Practices and Social Capital." *American Economic Journal: Applied Economics*, 5(3): 189–210.

[10] Algan, Yann, Alberto Bisin, Alan Manning, and Thierry Verdier (2012). "Cultural Integration of Immigrants in Europe." Oxford University Press.

[11] Antecol, Heather (2000). "An Examination of Cross-Country Differences in the Gender Gap in Labor Force Participation Rates." *Labour Economics,* 7(4): 409–426.

[12] Bisin, Alberto, Giorgio Topa, and Thierry Verdier (2004). "Cooperation as a Transmitted Cultural Trait." *Rationality and Society* 16: 477–507.

[13] Bisin, Alberto and Thierry Verdier (2000). "Beyond the Melting Pot: Cultural Transmission and Dynamics of Preferences." *Quarterly Journal of Economics*, 115(3): 955-988.

[14] Bisin, Alberto and Thierry Verdier (2001). "The Economics of Cultural Transmission and the Evolution of Preferences." *Journal of Economic Theory*, 97(2): 298–319.

[15] Bisin, Aberto and Thierry Verdier (2010). "The Economics of Cultural Transmission and Socialization." *Handbook of Social Economics*, Elsevier

[16] Bisin, Alberto, Eleonora Pattachini, Thierry Verdier, and Yves Zenou (2011). "Formation and Persistence of Oppositional Identities." *European Economic Review*, 55(8): 1046–1071.

[17] Borjas, Geroge J. (1992). "Ethnic Capital and Intergenerational Mobility." *Quarterly Journal of Economics*, 107(1): 123–150.

[18] Borjas, George J. (1995). "Ethnicity, Neighborhoods, and Human-Capital Externalities." *American Economic Review*, 85(3): 365–390.

[19] Bowles, Samuel (1998). "Endogenous Preferences: The Cultural Consequences of Markets and Other Economic Institutions." *Journal of Economic Literature,* 36(1): 75–111.

[20] Boyd, Robert and Peter J. Richerson (1985). "Culture and the Evolutionary Process." University of Chicago Press.

[21] Cavalli-Sforza, Luigi L. and Marcus W. Feldman (1981). "Cultural Transmission and Evolution: A Quantitative Approach." Princeton University Press.

[22] Cavalli-Sforza, Luigi L. (2001). "Genes, Peoples, and Languages." University of California Press.

[23] Di Tella, Rafael, Sebastian Galiani and Ernesto Schargrodsky (2007). "The Formation of Beliefs: Evidence from the Allocation of Land Titles." *Quarterly Journal of Economics*, 122(1): 209–241.

[24] Doepke, Matthias and Fabrizio Zilibotti (2008). "Occupational Choice and the Spirit of Capitalism." *Quarterly Journal of Economics*, 123(2): 747–793.

[25] Durante, Ruben (2009). "Risk, cooperation and the economic origins of social trust: an empirical investigation." MPRA Paper No. 25887.

[26] Fehr, Ernst (2009). "On the Economics and Biology of Trust." *Journal of the European Economic Association*, 7(2-3): 235–266.

[27] Fernandez, Raquel (2007). "Women, Work and Culture." *Journal of the European Economic Association,* 5(2-3): 305–332.

[28] Fernandez, Raquel (2008). "Culture and Economics." in S.N Durlauf and L.E. Blume, *New Plagrave Dictionary of Economics*, 2nd edition, Palgrave Macmillan, Basingstoke and New York.

[29] Fernandez, Raquel (2011). "Does Culture Matter." *Handbook of Social Economics,* in, J. Benhabib, M. O. Jackson and A. Bisin, *Handbook of Social Economics*, 1A, North-Holland, 481–510.

[30] Fernandez, Raquel (2013). "Culture change as Learning: The Evolution of Female Labor Force Participation over a Century, *American economic Review,* 103(1): 472-500.

[31] Fernandez, Raquel and Alessandra Fogli (2006). "Fertility: the role of Culture and Family Experience." *Journal of the European Economic Association,* 4(2-3): 552–561.

[32] Fernandez, Raquel and Alessandra Fogli (2009), "Culture: An Empirical Investigation of Beliefs, Work and Fertility." *American Economic Journal: Macroeconomics,* 1(1): 146–177.

[33] Fernandez-Villaverde Jesus, Jeremy Greenwood and Nezih Guner (2014). "From Shame To Game In One Hundred Years: An Economic Model Of The Rise In Premarital Sex And Its De-Stigmatization." *Journal of the European Economic Association*, 12(1): 25–61.

[34] Fry, Richard, "A rising share of young adults live in their parents? home", *Pew Research Centers Social Demographic Trends Project RSS.* Pew Social Trends, 1 Aug. 2013. Web. 18 Mar (2014).

[35] Giavazzi, Francesco, Fabio Schiantarelli, and Michel Serafinelli (2009) "Culture, Policies and Labor Market outcomes." *Journal of the European Economic Association*, 11(6): 1256–1289.

[36] Giuliano, Paola (2007). "Living Arrangements in Western Europe: Does Cultural Origin Matter?" *Journal of the European Economic Association*, 5(5): 927–952.

[37] Giuliano, Paola and Antonio Spilimbergo (2014). "Growing up in a Recession." *The Review of Economic Studies* 81(2): 787-817.

[38] Goldin, Claudia (2006). "The Quiet Revolution that Transformed Women's Employment, Education, and Family." *American Economic Review* 96(2): 1–21.

[39] Greeley, Andrew M. (1974). "Ethnicity in the United States: A Preliminary Reconnaissance." John Wiley & Sons.

[40] Gruber, Jonathan and Daniel M. Hungerman (2008). "The Church Versus the Mall: What Happens When Religion Faces Increased Secular Competition?" *Quarterly Journal of Economics,* 123(2): 831–862.

[41] Guiso, Luigi, Paola Sapienza, and Luigi Zingales (2006). "Does Culture Affect Economic Outcomes?" *Journal of Economic Perspectives,* 20(2): 23–48.

[42] Guiso, Luigi, Paola Sapienza, and Luigi Zingales (2007). "Long-Term Persistence." Working paper, University of Chicago.

[43] Guiso, Luigi, Paola Sapienza, and Luigi Zingales (2008). "Alfred Marshall Lecture: Social Capital as Good Culture." *Journal of the European Economic Association,* 6(2-3): 295–320.

[44] Guiso Luigi, Helios Herrera, and Massimo Morelli (2013). "A Cultural Clash View of the EU Crisis." EIEF Working Papers Series No.1321.

[45] Inglehart, Ronald and Wayne E. Baker (2000). "Modernization, Cultural Change, and the Persistence of Traditional Values." *American Sociological review,* 65(1): 19–51.

[46] Konya, István (2005). "Minorities and Majorities: A Dynamic Model of Assimilation." *Canadian Journal of Economics*, 38(4): 1431–1452.

[47] Lazear, Edward P. (1999). "Culture and Language." *Journal of Political Economy*, 107(6): 95–126.

[48] Luttmer, Erzo F. P. and Monica Singhal (2011). "Culture, Context, and the Taste for Redistribution." *American Economic Journal: Economic Policy*, 3(1): 157–79.

[49] Panebianco, Fabrizio. (2014) "Socialization networks and the transmission of interethnic attitudes." *Journal of Economic Theory* 150 (2014): 583-610.

[50] Pichler, Michael M. (2010) "The economics of cultural formation of preferences." No. 431. Working papers. Institute of Mathematical Economics.

[51] Putnam, Robert D. (1993). "Making Democracy Work." Princeton University Press.

[52] Rice, Tom W. and Jan L. Feldman (1997). "Civic Culture and Democracy from Europe to America." *The Journal of Politics*, 59(4): 1143–1172.

[53] Roland, Gerard (2004). "Understanding Institutional Change: Fast-Moving and Slow-Moving Institutions." *Studies in Comparative International Development*, 38(4): 109–131.

[54] Tabellini, Guido (2008a). "Presidential Address: Institutions and Culture." *Journal of the European Economic Association Papers and Proceedings*, 6(2–3): 255–294.

[55] Tabellini, Guido (2008b). "The Scope of Cooperation: Values and Incentives." *The Quarterly Journal of Economics*, 123(3): 905–950.

[56] Tabellini, Guido (2010). "Culture and Institutions: Economic Development in the Regions of Europe." *Journal of the European Economic Association,* 8(4): 677–716.

[57] Vaughan, Daniel (2013). "Nurture vs. nurture: Endogenous parental and peer effects and the transmission of culture." (No. 2013-04). Working Papers, Banco de México.