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Culture: Persistence and Evolution

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leads to integration of immigrants or to the emergence of immigration clusters in which separate cultural traits persist has been debated in the theoretical and empirical literature.[6]

We look at a variety of attitudes, rather than a single one because we surmise there could be substantial heterogeneity across cultural traits (and immigrants' origins as well) 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 signi cantly by the fourth generation. We use data from the General Social Survey (GSS) to analyze the evolution of cultural attitudes of US immigrants about religion, family, gender, sexuality, cooperation, redistribution, etc., distinguishing between rst, second, third and fourth (or higher) generations of British, Irish, German, Italian, Polish , Scandinavian and Mexican immigrants to the United States. The focus on these groups is largely imposed on us by the availability of su cient data for multiple generations distinguished by country of origin. We use the data contained in approximately 21 waves (the exact number varies across attitudes) of the GSS survey collected between the end of the 1970's and 2014. Although the GSS is far from being perfect, it is the only data source that allows a systematic investigation of the evolution of cultural values for *multiple* generations, *multiple* countries of origin and *multiple* traits.

In order to provide some structure in discussing the results, we develop a simple model of socialization and identity choice. The model builds on the contributions by Bisin and Verdier (2001) on parents's socialization choices, 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 traits, 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 weighing the expected transaction gains from assimilation and a switching cost that partly depends upon the parents' socialization e ort, and which also contains a component that is randomly distributed across the population. Parents choose the optimal level of socialization taking into account the child's optimization problem, knowing the distribution of the switching cost, but not the particular realization for their child. Insofar as in our set up parents also care about the ability of their children to interact productively with others, our model is also related to Doepke and Zilibotti (2008) who see \vertical transmission" as an active process of socialization where parents attempt to endow their children with values that they think will lead to success. Our model captures this through a parameter that describes how much a parent cares about the child's future well being.

[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, Doepke and Zilibotti (2008) and Doepke and Zilibotti (2017) for a model, respectively, of endogenous preference formation and one that mixes paternalism and altruism in preference transmission.

of others) display the highest degree of convergence by the fourth generation, as successive generations adapt to the norms of the new society in which they live. Attitudes towards politics and the role of government, sexual morality and abortion exhibit the lowest degree of convergence, followed by religious attitudes. Attitudes towards gender roles occupy an intermediate position, with attitudes towards the role of women in the labor market converging faster than those related to the role of women in politics. Family attitudes also display on average an intermediate level of convergence, but there is substantial heterogeneity among them.

Many of these results are largely consistent with one prediction of our simple model: faster convergence is observed for attitudes that are likely to generate larger transaction gains from assimilation, such as attitudes towards cooperation. Convergence is also slower for attitudes for which the utility gain to the parents from the child retaining the original trait (or the cost for the child to abandon them) is likely to be higher, such as some moral and religious values and political orientation.

Third, we nd that persistence is country speci c in the sense that the country from which one's ancestors came from matters in de ning 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 di culty in learning English, and the extent of residential segregation are (negatively) correlated with the fraction of convergent attitudes. These results too could 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. However, given the small number of countries in our sample, this results must be taken with a grain of salt.

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 3.1 we discuss how we measure cultural attitudes in the GSS, how we de ne generations and ethnic origin and which countries (or groups of countries) we use in our analysis. In Section 3.2 we describe how we recover the country of origin e ect for di erent generations, dynasties and time periods, while in Section 3.3 we illustrate our measure of cultural \convergence". In Section 4 we present and discuss our main empirical results. Section 5 contains several robustness checks and extensions. Section 6 concludes.

2 A Model of Cultural Transmission

A simple model will help us interpret our main empirical ndings. The model provides a framework to understand why the dynamics of cultural convergence may vary across di erent attitudes

In this section we describe the set up of the model, summarize its main results and draw the implications for the evolution of attitudes; details are consigned to an online appendix (Appendix 2). We assume there is one cultural trait in the population that can take two values: one associated with the minority, denoted by m, the other associated with the majority, denoted by M. We normalize the population to one and assume that the initial size of the minority is q. Personal attitudes of a second-generation immigrant belonging to the minority group 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, 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.

We break down the analysis of how attitudes evolve in three steps. First we focus on the child's problem of choosing an identity: what determines her decision whether or not to \assimilate", that is to abandon the minority trait and acquire the majority one?[11]

2.1 The model set up: child identity choice and parent socialization problem

The child's problem is a simple variant of Lazear (1999)[12]: V^i, ($i = m$ or M) denotes the surplus produced by a social interaction between two persons both belonging to the same group { minority or majority. We assume that the two surpluses are identical ($V^m = V^M = V$), a simplifying

($G(:) = 0$). When $\underline{z} \quad (1 \quad q)V^{\ M} \quad q^{\ m}V \quad d \quad z$, the child will assimilate with probability:

$$G\ (1 \quad q)V^{\ M} \quad q^{\ m}V \quad d \quad = \frac{(1 \quad q)V^{\ M} \quad q^{\ m}V \quad d \quad \underline{z}}{z \quad \underline{z}} \tag{1}$$

Each family is a single-parent family, raises only one child and only cares about her immediate descendants. As in Bisin and Verdier (2001) the parent can a ect the probability that the child assimilates socializing her to the family values at a cost $\frac{c}{2}^{\ 2}$ with $c >$

represented by d. It is instead decreasing in c, the cost of the e ort put into educating the child. It is also decreasing in ^{M}

and their stability properties.[18] Consider the value of q_t; θ, such that $(1-\theta)^{M}V - \theta^{m}V - d = \underline{z}$ so that there is no gain from assimilation. For greater (smaller) values of $q(0)$ the net gain is negative (positive). It is easy to show, using equation (3) that:

$$\theta = {}^{M}V$$

2.3 Discussion

It is possible to tweak the model to recognize that, because of geographic segregation, the probability for a member of the minority of encountering another member of the same minority may di er from the share of the minority in the population, provided the latter is treated as exogenously given. If we keep using q_t to denote the probability of encountering someone with the same minority trait, and use $_t$ to denote the proportion of the population with the minority trait, then we can show that the basic insights we reached above about the dynamic behavior of q_t also apply to $_t$:[19] Moreover, now the intensity of a parent's socialization e ort increases in $_t$ and in the degree of segregation because both decrease the probability of meeting a member of the majority and hence of paying a net penalty when non assimilated. As a result the probability of a non convergence equilibrium increases in the degree of (exogenous) segregation. This prediction is consistent with the ndings of Fernandez and Fogli (2009) who have shown that the degree to which second-generation Americans tend to live in the same neighborhood enhances the preservation of the country of ancestry culture. The issue of how to endogenize the location choice of immigrants is an important and interesting topic that we leave however for future research.[20]

3.1 Measuring Cultural Attitudes and De ning Generations and Country of Origin in the GSS

Our measurement of cultural attitudes is based on the General Social Survey (GSS). We use

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 in uence 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 de ned below). The country of 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 through longer exposure to a di erent set of economic and social opportunities, to di erent institutions, and cultural in uences.

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 a limited number of European countries and from Mexico. We focus on countries for which we have relatively numerous observations: Great Britain (GB), comprising England, Wales and Scotland, Germany, (GER), Poland (POL), Ireland (IRE), Italy (ITA) and Mexico (MEX). In addition we consider Scandinavian immigrants from Denmark, Norway, Sweden and Finland as a single group (SCA) on the basis of a relatively common cultural background.[25] These groups together constitute a very large fraction of the historical immigration to the US from Europe and Latin America.

We de ne the generation to which an immigrant belongs following what is typically assumed

respondent as the main one. This potential drawback should be kept in mind. Our de nition could, in principle, be made tighter by limiting our analysis to respondents who indicate only one country of ancestry. This, however, would reduce substantially the number of observations, as only 50% percent of the sample chooses just one ancestry. The decrease is particularly severe for the fourth and third generation, for which we have an average decrease of 85% and 65%, respectively. As this would lead to unreliable estimates, we will not pursue this option here.

3.2 Recovering Country of Origin E ects for Di erent Generations within a Single Dynasty

The way an individual perceives the world is shaped by the values and beliefs of his/her parents. The attitudes of one's parents were, in turn, shaped by their own parents. This implies that an individual's ancestral origin is an important factor determining his/her values and beliefs. In order to capture the extent to which someone's country of origin impacts his/her attitudes, we estimate a Probit model which includes indicator variables for one's ancestry.[27] We allow the e ect of ancestry to depend upon the temporal \distance" from the country of origin. This distance is measured by whether the immigrant is rst, second, third, or fourth or higher generation. Moreover, the ancestry e ect will depend upon the birth cohort of an individual, since the cultural heritage brought by immigrants and transmitted to their descendants depends upon when they left the mother country to come to the US (we will also assume a 25 year interval between cohorts). We allow the e ect of the country of origin to depend on generation and cohort in a multiplicative fashion, imposing as little restrictions as possible on the data. We will use these e ects to chart the evolution of attitudes within the only complete \dynasty" we observe in our sample. More precisely, we estimate the following Probit model:

$$Pr(y_t^i = 1) = \sum_{o \in O} \sum_{g \in G} \sum_{c \in C} I_{(o,g,c)}$$

education. Yet, we prefer to de ne country of origin e ects net of these factors, in an attempt to capture deeper cultural values and beliefs that go beyond personal characteristics and economic and educational circumstances. However, in the robustness section we also experiment with more limited sets of controls.[28] These individual controls are held constant when we compare changes of attitudes across di erent immigrants. Finally, note that we include survey-year e ects common to all respondents to capture general variations of attitudes over time. Summarizing, the country-generation e ect is based on the estimated value of $_{o;g;c}$ with $o \ 2 \ f1;::;7g$; $g \ 2 \ f1;::;4g$; $c \ 2 \ f1892 \quad 1916; 1917 \quad 1941; 1942 \quad 1966; > 1967g$. In order to simplify the notation we include in the subscript denoting cohorts only the initial year of the cohort grouping (e.g. 1892 instead of 1892 1916, etc.)

Our sample includes responses of immigrants whose ancestors moved to the U.S. during different periods. For example, the ancestors of some of our respondents arrived with the large migration waves around the turn of the twentieth century, while the ancestors of others immigrated more recently. In order to avoid mixing dynasties of immigrants that started at di erent points in time, and hence brought with them di erent attitudes, in our empirical work we focus on the four generations of the only full "synthetic" dynasty of immigrants observable in our data { the one that starts with the rst generation born between 1892 and 1916 and ending with the last generation being born after 1967. We assume that the cohort born between 1917 and 1941 contains the children of the rst generation immigrants born between 1892 and 1916 and so on. The culture of the rst generation of immigrants in our synthetic dynasty are captured by the country-generation-cohort speci c e ects estimated for the recently arrived immigrants born between 1892 and 1916, denoted by $_{o;1;1892}$. Those for the second generation are those for the cohort born 25 years later, i.e. between 1917 and 1941, $_{o;2;1917}$. Finally the third generation e ects are captured by $_{o;3;1942}$, and those of the fourth generation (or higher) by $_{o;4;1967}$. As for many countries the GSS does not have many respondents who are both rst generation and belong to the cohort of 1892-1916, in order to have enough observations for the rst generation of each country, we assume that the rst generation of the 1892-1916 cohort and of the 1917-1941 cohort are characterized by the same coe cient ($_{o;1;1892} = _{o;1;1917}$): In Table 3, Part 1 , we report, as an example, the number of observations for each country, generation and cohort for the respondents to the question about trust. In Part 2 of the table we summarize the number of observations available to identify the country-generation-cohort e ects for the 1892-1916 dynasty (allowing for the e ects of the rst generation of the 1892-1916 and 1917-1941 cohorts to be identical).

Note that while avoiding mixing dynasties is very important, the results found for our speci c full dynasty may not extend to other. In particular, recent waves of immigration feature origin countries that are very di erent from those of migrants who arrived in 1892-1916, and hence convergence patterns may also be di erent. Moreover, one should be aware that we have at our

[28] See also Algan and Cahuc (2007, 2010) and Giavazzi, Schiantarelli, and Sera nelli (2013). We also present results with two alternative sets of controls: one including only age, age squared, year of the survey, gender, regional indicators, education and income; the other more limited one also excludes education and income.

disposal only synthetic and not actual dynasties, that there is a degree of arbitrariness in the de nition of higher generations, and that we have a limited number of observations for the rst generation. In spite of the limitations of the data and of the structure one needs to impose on them, we believe that they provide a unique and useful insight on the evolution of cultural traits over multiple generations of immigrants.

3.3 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 di erent generations of immigrants towards the norm set by the more established and dominant groups. We start by calculating the deviation of the attitude of a given respondent from the average attitude of the respondents considered to represent the dominant culture. For each of the countries of origin we de ne

$$e_{(o;g;c)} = \quad _{(o;g;c)} \qquad _{(ave;4;c)} \tag{7}$$

where $e_{o;g;c}$ represents the di erence of the generation and cohort speci c country-origin e ect, $_{o;g;c}$, from the norm (^{0}s here denote estimated values). To capture the multi-cultural nature

study how the particular attitude of descendants changes from the rst generation all the way to the fourth generation of the dynasty starting in 1892-1916, relative to the respective norms.[31]

We start by asking whether the absolute value of the distance from the norm decreases between the rst and the second or between the rst and the fourth generation for each country and then compute for each attitude the proportion of countries for which the distance has decreased. This methodology builds on and extends the approach proposed by in Algan, Bisin, Manning, and Verdier (2012).[32] However, whereas they focus on the changes between the rst and second generation, we analyze the evolution of attitudes up to the fourth generation. Most importantly, we keep the dynasty constant { only considering the descendants of a \common original immigrant". This approach provides a rich, country of origin speci c, picture of the process of cultural transmission, which is not contaminated by changes in attitudes of successive cohorts of immigrants.

It is useful to characterize the various patterns of convergence or non-convergence using a graph. Assume one plots the generation-1 deviation on the horizontal axis and the generation-4 deviation on the vertical axis (i.e. $e_{o;1;1892}$ and $e_{o;4;1967}$). We can partition the four quadrants in regions by drawing a 45 degree line and a 135 degree line going through the origin (see Figure 2a). Focusing on Quadrant I, with positive initial and nal 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 the45 degree 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, where the di erence from the norm is rst 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

value of the distance from the norm going from the 1^{st} to the 4^{th} generation (see Figure A1 in Appendix 1 for a graphical summary of the observations for each attitude). Alternatively, we can do this for the 1^{st} and the 2^{nd} generations. We de ne the proportion of countries within these convergent region as $_{45}$.

A possible drawback of $_{45}$ is that it may not be a strict enough criterion. In particular it does not allow us to distinguish between slow-converging attitudes that feature country-generation e ects close to the 45 degree line (or its re ection), and fast-converging ones clustered closer to the origin, along the y-axis. To address this concern we de ne $_{22:5}$ as the proportion of countries situated between the x-axis and the 22:5 degree line (or its re ection). 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.

attitudes of the fourth (or higher) generation European immigrants in our sample. We compare the convergence that occurs by the fourth generation with that occurring between the first and the second generation.

After presenting our baseline results we will explore in the Robustness and Extensions section several robustness exercises, such as tightening or relaxing the convergence criterion, using a reduced set of controls in the Probit equation, and changing the definition of the norm. In the that section (see 5.4) we also present evidence on the strength of the relationship between

this and change their attitudes. An alternative interpretation is that initially immigrants live

Finally, the number of convergent attitudes by country is negatively correlated ($r = :56$) with the measure of residential segregation used in Borjas 1995.[42] Although our model does not include a residential choice, we have seen that it can be tweaked to recognize that, because of geographic segregation, the probability for a member of the minority of encountering another member of the same minority may di er from the share of the minority in the population, provided the latter is treated as exogenously given. The message the model deliversin this case { albeit in a very reduced form { is that a high degree of segregation by 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. Our results broadly con rm this prediction.

5 Robustness and Extensions

In this section we discuss several robustness exercises. Are our results robust, for instance, to a change in the tightness of the convergence criterion? Are they robust to the menu of controls included in the Probit model used to measure the country-generation-cohort e ects, or to changes in the de nition of the norm to which attitudes converge? The answer to these questions, as we shall see in the next three sub-sections, is mostly yes.

Finally, we extend our analysis to a related, but quite distinct issue: how do the cultural attitudes of succeeding generations of immigrants relate 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? We will also ask how the attitudes of various generations of immigrants are related to those prevailing in the country of origin for the cohort from which the rst generation of immigrants was drawn. Although the issue of distance from the contemporary or ancestral culture in the country of origin and the main question addressed in this paper { convergence to the prevailing norm in the country of immigration { are di erent, we address it since it has often been studied in this literature, in a context similar to ours.

5.1 Changing the De nition of the Convergence Region

In our baseline results we have measured convergence focusing, for each attitude, on the index we called $_{22:5}$, 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 A3 of Appendix 1 (available online) we present detailed results for the 4^{th} generation based on less or more stringent criteria for convergence: reducing that distance by any amount ($_{45}$), by at least a third ($_{30}$), and by at least two thirds ($_{15}$). The (Spearman) rank correlation

[42] See Borjas (1995), Table 2. We use the measure based on the percentage of rst and second generation immigrants in the neighborhood of the same ethnicity as a rst-generation immigrant. Similar results are obtained using gures for the second generation.

coe cients between the proportions of converging cases for each attitude (by generation 4) in the baseline and those obtained using these alternative criteria are reported at the bottom of the table. Using $_{30}$ or $_{15}$; instead of $_{22:5}$; leaves the ranking of the degree of convergence of the di erent groups of attitudes by and large unchanged. Correlation coe cients with the ranking in our baseline case for individual attitudes are also very high (in excess of 72%). Moreover, the conclusion that it is important to go beyond the second generation in assessing convergence also still holds. The correlation with the ranking obtained when using $_{45}$ is instead smaller (.54) and the di erence in convergence speed across groups less sharp (although cooperation remains

5.4 Changing the De nition of the Norm

In Table A6a we return to our baseline speci cation and experiment changing the de nition of the norm. More speci cally, instead of de ning the norm as the weighted average of the attitudes of the fourth (or higher) generation European immigrants in our sample, we choose as reference point the fourth generation descendants of immigrants from Great Britain. The rank correlation coe cient with our original ranking is .57 and our conclusions remain largely the same. This should not be surprising since descendants of British immigrants represent a large share (around 40%) of the immigrants who are fourth generation (or higher). Our conclusions are also unchanged when we include Mexico in the calculation of the norm, together with the other European countries (see Table A6b). The correlation coe cient with the ordering in the basic speci cation is now 0.88.

5.5 Immigrants' Attitudes and Attitudes in the Country of Origin

When assessing the strength of the association between immigrants' culture and the culture of the country of ancestry { which, as we explained, is a question di erent but related to the one addressed in this paper { there are two possible ways to proceed. We could focus on the relationship of immigrants' attitudes with those of the *corresponding cohort* in the country of origin. Alternatively we could compare immigrants' attitudes with attitudes in the country of origin for the cohort to which the *rst generation* of immigrants belonged and from which the various generations descend. In the former case the reference point is the "contemporary" (same cohort) culture. In the alternative it is the "ancestral" culture of the country of origin, that is the culture the founder of the dynasty brought with him/her when he/she rst migrated to the US. We shall conduct both exercises for di erent generations of immigrants.

We measure attitudes in the countries of origin using the European Value Survey (EVS) and the World Value Survey (WVS) which ask very similar questions, some of which coincide { often are almost identical { to those asked in the GSS and used in our baseline results. The match between the two surveys is very close for the questions regarding some of the cultural attitudes we have used in our empirical work, such as *trust, attend, postlife,* and *homosex,* and a fairly close (but not perfect) for *pray, thnkself, obey, fechild, fework,* and *abany* (See Table A7). The match

each cultural attitude on the GSS data, as we did before, but replacing the origin-generation-cohort dummies with the time-varying and country-speci c cultural proxies obtained in the rst stage, interacted with generation dummies. We continue to control for all the individual speci c variables used before and for common year e ects. Essentially, we are assuming that the country of origin and cohort speci c movements in culture for US immigrants are proportional to the cultural proxy estimated in the rst stage, *and* that its e ect may vary across generations. In particular, we are interested in assessing the signi cance of the generation-speci c coe cients and whether the e ect of the culture of origin decreases (or not) going from the 1^{st} to the 4^{th}

rst migrated to the US. In practice, a weakening of the association with the founder's ancestral culture is likely to be a precondition for convergence to the norm for successive generations of immigrants within a dynasty.

6 Conclusions

Are immigrants' values and beliefs deeply rooted in the culture of the country of origin, so that they persist relatively unchanged across generations, or do they change in response to the new economic and social environment and converge rather rapidly to the prevailing norm of the recipient country? Answering this question is an important step in addressing the more general problem of how persistent a society's values and beliefs are { an issue on which there is abundant disagreement. In this paper we have presented new evidence on this question by analyzing cultural attitudes of di erent generations of European and Mexican immigrants to the US, and we have provided a simple model to shed light and interpret the evidence on the speed of convergence.

Studying US immigrants we nd that persistence is not the same across cultural traits. Some show a higher degree of convergence to the prevailing norm: this is true, for example, for attitudes towards cooperation (trustworthiness, helpfulness and fairness of others), towards the e ect of women's work on the child-mother relationship, and some family attitudes, such as views on divorce. Other traits, instead, show a lower degree of convergence: for instance attitudes towards politics and redistribution, sexuality, abortion, religious values, and some family attitudes such as sharing home with grown-up children and frequency of evenings spent with relatives. A higher degree of convergence appears to characterize attitudes for which the bene ts of assimilation are likely to be greater; instead, attitudes that are either characterized by lower bene ts or for which direct transmission within the family is likely to be more important and e ective show slower convergence.

Importantly we also nd that one would not come to these conclusions if one limited the analysis to just the rst two generations of immigrants, as the literature has so far mostly done. Focusing only on the rst two generations biases the conclusion in favor of persistence. Finally, we show that persistence is country speci c in the sense that the country from which one's ancestors came matters for the pattern of generational convergence (or lack thereof). The strength of family ties, the ability to learn English and residential segregation appear to be important factors in this respect.

The implication of our results for the debate about the \melting pot" is that for many-cultural traits and beliefs a melting-pot e ect was certainly at work among immigrants. For other traits, however, descendants of immigrants from di erent countries of ancestry have maintained over

7 Tables and Figures

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

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 $x_{GSS} < 5$)
	pray	frequency of prayer (y=1 for less often if $x_{GSS} > 4$)
	reliten	intensity of religious a liation (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 $x_{GSS} < 3$)
	fepol	women not suited for politics (y=1 for no if $x_{GSS} = 2$)
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 GSS survey have been recoded to have a binary outcome. *y* denotes the indicator variable in the Probit. Variable

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

Part 1:

	Cohort 1892-1916				Cohort 1917-1941				Cohort 1942-1966				Cohort 1967+			
	Gen1	Gen2	Gen3	Gen4	Gen1	Gen2	Gen3	Gen4	Gen1	Gen2	Gen3	Gen4	Gen1	Gen2	Gen3	Gen4
GER	13	71	60	118	46	78	302	632	66	87	345	1,579	29	38	57	536
POL	13	48	4	1	14	81	59	14	26	30	207	81	6	7	17	62
SCA	12	57	15	4	10	72	124	71	16	28	183	307	6	3	17	112
IRE	8	33	28	121	11	53	158	493	26	44	233	1,153	11	19	48	445
ITA	20	54	3	1	37	180	74	13	37	86	387	173	7	28	71	186
GB	21	43	49	237	59	82	123	1,017	69	83	166	1,501	21	17	25	420
MEX	2	3	0	3	27	45	13	12	151	110	86	73	263	165	42	76

Part 2:

	Dynasty 1892-1916			
	Gen1	Gen2	Gen3	Gen4
GER	59	78	345	536
POL	27	81	207	62
SCA	22	72	183	112
IRE	19	53	233	445
ITA	57	180	387	186
GB	80	82	166	420
MEX	29	45	86	76

Notes: In part 2 we assume that of the rst generation of the 1892-1916 and 1917-1941 cohort share the same attitude towards trust.

Table 4: Convergence of Cultural Attitudes (by Groups): Comparing Generation 4 and 2

		Gen 4 $_{22:5}$	Gen 2 $_{22:5}$	*4*	90% CI	95% CI
Group A - Cooperation	*trust fair helpful*	81%	33%	48%	(14%, 48%)	(10%, 52%)

Table 5: Convergence by Each Cultural Attitude and Country

		Gen 4 $_{22:5}$	GER	POL	SCA	IRE	ITA	GB	MEX
Group A - Cooperation	*trust*	71%	1	1	1	1	0	1	0
	fair	71%	1	0	1	1	1	1	0
	helpful	100%	1	1	1	1	1	1	1
Group B - Government	*eqwlth*	57%	1	0	1	1	1	0	0
	helppoor	29%	1	0	0	0	0	1	0
	polviews	29%	0	0	0	0	0	1	1
Group C - Religion	*attend*	57%	1	0	0	1	1	0	1
	pray	57%	1	0	0	1	0	1	1
	reliten	57%	1	0	0	1	1	1	0
	postlife	71%	1	0	1	1	1	0	1
	prayer	57%	0	0	0	1	1	1	1
Group D - Family	*thnkself*	57%	1	1	0	0	1	1	0
	obey	71%	0	1	0	1	1	1	1
	pillok	71%	1	0	1	1	0	1	1
	aged	43%	0	0	0	1	1	0	1
	divlaw	100%	1	1	1	1	1	1	1
	socrel	57%	1	0	0	0	1	1	1
Group E - Gender Roles	*fechild*	71%	1	1	1	0	1	0	1
	fepol	57%	1	1	1	0	0	1	0
Group F - Abortion	*abany*	43%	1	0	0	1	0	1	0
	abany	71%	1	1	1	1	0	0	1
Group G - Sexual Behavior	*premarsx*	43%	1	0	1	0	0	0	1
	homosex	43%	0	1	1	1	0	0	0
Group H - Mobility/Success	*getahead*	57%	1	0	1	0	1	1	0
			79%	38%	54%	67%	58%	67%	58%

Notes: The gures in the table represent the number of times we observe convergence for each country and each attitude (1 denotes convergence). 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 ($_{22:5}$ criterion). Gen 4 $_{22:5}$ denotes here the percentage of convergence cases for each attitude.

Table 6: A Di erent Measure of Convergence: Change in the Median Absolute Deviation

		Median (Dev G2 { Dev G1)	Median (Dev G4 { Dev G1)	Group Average
Group A - Cooperation	*trust*	-0.059	-0.160	-0.320
	fair	0.034	-0.440	
	helpful	-0.262	-0.352	
Group B - Government	*eqwlth*	-0.036	-0.151	-0.08
	helppoor	-0.153	-0.075	
	polviews	0.026	-0.007	
Group C - Religion	*attend*	-0.012	-0.131	-0.180
	pray	-0.120	-0.062	
	reliten	-0.154	-0.281	
	postlife	-0.240	-0.344	
	prayer	-0.045	-0.071	
Group D - Family	*thnkself*	-0.328	-0.326	-0.190
	obey	0.031	-0.315	
	pillok	0.099	-0.117	
	aged	-0.121	-0.102	
	divlaw	0.053	-0.113	
	socrel	-0.070	-0.145	
Group E - Gender Roles	*fechild*	-0.452	-0.431	-0.270
	fepol	-0.132	-0.109	
Group F - Abortion	*abany*	-0.004	-0.006	-0.200
	abany	-0.274	-0.403	
Group G - Sexual Behavior	*premarsx*	-0.106	-0.039	-0.030
	homosex	0.0325	-0.030	
Group H - Mobility/Success	*getahead*	-0.205	-0.130	-0.130

Notes: The table contains the median value across countries of the change in the deviation from the norm between generation 1 and generation 4 or 2.

Table 7: Relationship between Attitudes in the Country of Origin and Attitudes of US Immigrants across Generations

Part 1: Relationship with contemporary attitudes

Variable		*trust*	*attend*	*pray*	*postlife*	*thnkself*	*obey*	*fechild*	*abany*	*homosex*
$ContemporaryCulture_o$	$I_{(g=1)}$	0.39	0.31	0.39	0.77	0.42	0.36	0.18	0.00	0.09
		(5.12)	(4.47)	(4.91)	(3.55)	(3.83)	(2.04)	(3.76)	(-0.08)	(1.81)
$ContemporaryCulture_o$	$I_{(g=2)}$	0.34	0.10	0.17	0.08	0.11	0.08	0.10	-0.04	0.11
		(4.96)	(1.94)	(2.49)	(0.65)	(1.36)	(0.59)	(2.61)	(-0.96)	(2.41)
$ContemporaryCulture_o$	$I_{(g=3)}$	0.26	0.10	0.05	0.22	0.02	0.08	0.08	0.01	0.03
		(4.25)	(3.39)	(0.97)	(2.91)	(0.24)	(1.05)	(2.22)	(0.39)	(0.79)
$ContemporaryCulture_o$	$I_{(g=4)}$	0.22	-0.02	0.04	-0.05	-0.02	-0.14	0.10	0.03	0.09
		(3.59)	(-1.00)	(1.16)	(-1.08)	(-0.28)	(-2.90)	(2.63)	(0.86)	(2.26)

Part 2: Relationship with ancestral attitudes

Variable		*trust*	*attend*	*pray*	*postlife*	*thnkself*	*obey*	*fechild*	*abany*	*homosex*
$AncestralCulture_o$	$I_{(g=1)}$	0.52	0.35	0.41	0.66	0.56	0.38	0.21	0.08	0.14
		(4.72)	(4.91)	(4.93)	(3.07)	(3.65)	(2.06)	(2.52)	(1.17)	(1.58)
$AncestralCulture_o$	$I_{(g=2)}$	0.49	0.20	0.21	0.08	0.13	0.09	0.08	0.05	0.11
		(4.90)	(3.34)	(2.53)	(0.63)	(1.22)	(0.51)	(1.42)	(0.85)	(1.52)
$AncestralCulture_o$	$I_{(g=3)}$	0.32	0.09	0.04	0.10	-0.01	0.27	0.04	0.05	0.02
		(3.71)	(2.16)	(0.64)	(1.11)	(-0.18)	(1.60)	(0.95)	(0.93)	(0.45)
$AncestralCulture_o$	$I_{(g=4)}$	0.31	-0.12	0.02	-0.09	0.02	-0.07	0.02	0.09	0.10
		(3.22)	(-2.89)	(0.37)	(-1.10)	(0.36)	(-0.41)	(0.62)	(1.62)	(2.04)

Notes: $ContemporaryCulture_o$ denotes the culture of the corresponding cohort of the country of origin. $AncestralCulture_o$ denotes the culture of the cohort from the country of origin which originates the dynasty which the immigrant belongs to. Generation speci c coe cients are reported. *z* statistics in parentheses.

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

Fig. 1b: Dynamics and Equilibria: Only Full Assimilation Equilibrium

Fig. 2a: Generational Convergence and Non-convergence Regions (by type)

Fig. 2b: Convergence Region Implied by the 22:5^{o} Cut-o Rule

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Appendix 1: Robustness (for online publication only)

Table A1: Descriptive Statistics for Country-Generation Fixed E ects for Each Cultural Attitude

		Gen1		Gen2		Gen3		Gen4	
	trust	-1.89	(0.78)	-1.81	(0.36)	-1.61	(0.17)	-1.48	(0.21)
Group A - Cooperation	*fair*	-0.66	(0.41)	-0.61	(0.39)	-0.61	(0.17)		

Table A3: Sensitivity of Convergence Across Di erent Criteria

		Gen 4 $_{45}$	Gen 4 $_{33}$	Gen 4 $_{22:5}$	Gen 4 $_{15}$
Group A - Cooperation	*trust* *fair* *helpful*	86%	86%	81%	67%
Group B - Government	*eqwlth* *helppoor* *polviews*	76%	52%	38%	38%
Group C - Religion	*attend* *pray* *reliten* *postlife* *prayer*	77%	69%	60%	40%
Group D - Family	*thnkself* *obey* *pillok* *aged* *divlaw* *socrel*	86%	69%	67%	50%
Group E - Gender Roles	*fechild* *fepol*	71%	71%	64%	64%
Group F - Abortion	*abany* *abany*	71%	57%	57%	50%
Group G - Sexual Behavior	*premarsx* *homosex*	71%	50%	43%	36%
Group H - Mobility/Success	*getahead*	71%	57%	57%	14%

Rank Correlation

	Gen 4 $_{45}$	Gen 4 $_{33}$	Gen 4 $_{22:5}$	Gen 4 $_{15}$
Gen 4 $_{45}$	1.00			
Gen 4 $_{33}$	0.59	1.00		
Gen 4 $_{22:5}$	0.54	0.88	1.00	
Gen 4 $_{15}$	0.43	0.76	0.72	1.00

Notes: The table shows di erent 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 rst generation has been cut by any amount (Gen 4 $_{45}$), by a third (Gen 4 $_{30}$), by half (Gen 4 $_{22:5}$), and by two thirds (Gen 4 $_{15}$) by generation 4. The second table lists the rank correlations between the di erent convergence criteria.

Table A5b: Convergence of Cultural Attitudes: Limited Set of Controls

Table A6b: Convergence of Cultural Attitudes: Including Mexico in Benchmark

		Gen 4 $_{22:5}$	Gen 4 $_{22:5}$	Gen 2 $_{22:5}$	Δ	90% CI	95% CI
Group A - Cooperation	*trust*	57%	71%	33%	38%	(14%, 48%)	(10%, 52%)
	fair	57%					
	helpful	100%					
Group B - Government	*eqwlth*	71%	43%	43%	0%	(0%, 43%)	(-5%, 43%)
	helppoor	29%					
	polviews	29%					
Group C - Religion	*attend*	57%	57%	46%	11%	(3%, 31%)	(0%, 34%)
	pray	43%					
	reliten	57%					
	postlife	86%					
	prayer	43%					
Group D - Family	*thnkself*	57%	67%	43%	24%	(10%, 36%)	(7%, 40%)
	obey	71%					
	pillok	71%					
	aged	43%					
	divlaw	100%					
	socrel	57%					
Group E - Gender Roles	*fechild*	71%	71%	43%	29%	0%, 43%)	(-7%, 50%)
	fepol	71%					
Group F - Abortion	*abany*	43%	64%	50%	14%	(-7%, 36%)	(-14%, 43%)
	abany	86%					
Group G - Sexual Behavior	*premarsx*	43%	43%	43%	0%	(0%, 43%)	(-7%, 50%)
	homosex	43%					
Group H - Mobility/Success	*getahead*	57%	57%	71%	-14%	(-29%, 43%)	(-29%, 43%)

Notes: This table replicates Table 4 using a benchmark that includes the attitudes of Mexican immigrants. Gen 4 $_{22:5}$ (Gen 2 $_{22:5}$) denotes the average percentage of country observations for which the absolute value of the deviation from the norm has been cut at least in half between generation 1 and generation 4 (2) within each group. Δ denotes the di erence in the percentage of convergent cases between generations 4 and generation 2. The last two columns report the bootstrapped 90% and 95% con dence intervals for Δ, based on 500 replications estimating the Probit equation, based on strati ed sampling with replacement in the country-generation-cohort cells.

Table A7: 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)
fechild	d061	Pre-school child su ers with working mother (y=1 for yes if x_{EVS} > 2)
abany	f120	Justi able: abortion (y=1 for yes if x_{EVS} = 10)
homosex	f118	Justi able: 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 rst stage Probit. x_{EVS} denotes the answer number to the EVS/WVS questions.

Fig. A1a: Country Deviation from Norm: Trust { Thinkself (British (u), Germany (g), Irish (r), Italy (i), Polish (p), Scandinavian (s), Mexican (m)

Fig. A1b: Country Deviation from Norm: Obey { Getahead (British (u), Germany (g), Irish (r), Italy (i), Polish (p), Scandinavian (s), Mexican (m)

7.2 The Parent's Socialization Problem

Notation and assumptions

Each family is a single-parent family and produces only one child. The parent can socialize the child at a cost $c(\ ) = \frac{c}{2}\ ^2$, and she derives utility $'$ if the child maintains the family trait, which occurs with a probability she can a ect through her educational e ort. The parent also cares about her child's utility. The extent of a parent empathy is described by : for = 0 the parent doesn't care about the child's utility and only cares about her wish that the child does not assimilate.

Parent maximization

We abstract from all components of the parent's utility that do not depend upon the costs and bene ts of educating the child. The parent maximizes her expected utility $w(\ )$ given by:

$$\begin{aligned} w(\ ) = \ & c(\ ) + \ 'Prob(\text{no child assimilation}) + \\ & + \ Prob(\text{no child assimilation})\ qV + (1 \quad q)V(1 \quad ^M) \\ & + \ Prob(\text{child assimilation})\,[q(1 \quad ^m)V + (1 \quad q)V \quad d(\ )] \\ & \quad \int_{\underline{z}}^{(1\ q)^M V \ \ q^m V \ \ d} \frac{z_i}{\overline{z} \quad \underline{z}} dz_i \end{aligned} \tag{A8}$$

The parent's optimal socialization e ort is determined by the following rst order condition:

$$c \ + \ d\frac{(1 \quad q)\ ^M V \quad q\ ^m \quad d \quad \underline{z}}{\overline{z} \quad \underline{z}} = \frac{'d}{\overline{z} \quad \underline{z}}$$

Solving for the optimal level of , , one obtains:

$$= \ ' \qquad [(1 \quad q)\ ^M V \quad q$$

Our parametrization implies:

$$q = \frac{M}{V}\,'d^2$$