Migration and Cultural Change

Hillel Rapoport   Sulin Sardoschau   Arthur Silve

ASSA Meeting, New Orleans, January 6, 2023

Introduction

Every species of government has its specific principles. Ours perhaps are more peculiar than those of any other in the universe. (...) To these nothing can be more opposed than the maxims of absolute monarchies. Yet from such we are to expect the greatest number of emigrants. They will bring with them the principles of the government they leave, imbibed in their early youth; (...) These principles, with their language, they will transmit to their children. In proportion to their numbers, they will share with us the legislation. They will infuse into it their spirit, warp and bias its directions, and render a heterogeneous, incoherent and distracted mass.

Thomas Jefferson, Notes on Virginia, 1785

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Introduction

[P]arvenue à un degré de décomposition répugnant, l'Europe occidentale n'était plus en état de se sauver elle-même – pas davantage que ne l'avait été la Rome antique au Ve siècle de notre ère. L'arrivée massive de populations immigrées empreintes d'une culture traditionnelle encore marquée par les hiérarchies naturelles, la soumission de la femme et le respect dû aux anciens constituait une chance historique pour le réarmement moral et familial de l'Europe (...).

Michel Houellebecq, Soumission, 2015

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Introduction

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Introduction

"The track record of culturally diverse societies is not so encouraging...In most societies for most of history high diversity has been a handicap."

- Collier (2014)

"For immigrants to generate substantial global gains, it must be the case that billions of immigrants can move to the industrialized economies without importing the "bad" organization, social models, and culture that led to poor economic conditions in the source countries in the first place"

- Borjas (2015)

Introduction
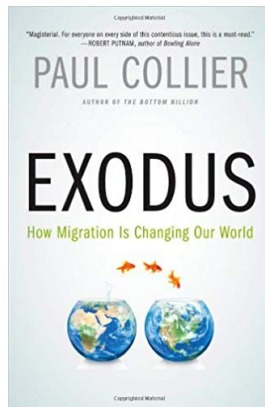
Cultural Change and Persistence

▶ Culture can be very persistent (Guiso et al., 2006), which is explained by deep-rooted factors such as genetic composition (Ashraf and Galor, 2013), geographic conditions (Ashraf, Galor and Klemp, 2020; Giuliano & Nunn, 2021, Galor & Savitskiy, 2018); but some dimensions change rapidly (Fernandez et. al 2019).

▶ Interestingly, immigrants are often taken as example of persistence (e.g., Giuliano and Nunn, 2021) or change (e.g., Giavazzi et al. 2019)

▶ What happens within countries? (Desmet & Wacziarg, 2021, Bertrand & Kamenica, 2018) Across countries?

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Introduction

Cultural Change and Globalization

- Is globalization creating a "global village" (McLuhan and Fiore 1997, Pieterse 2015), "Americanization" (Ritzer, 2012), polarization (Huntington, 2000, Inglehart and Norris, 2003)?

- How do dimensions of globalization such as trade and migration affect cultural formation in exporting/importing countries, and cultural similarity between them? Trade seems to lead to cultural convergence (MTV, 2014). What about migration? First paper to look at this question.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Migration-based cultural change

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Migration-based cultural change

Compositional/Static Channels	Diffusion/Dynamic Channels
Cultural Selection: Migrants move to countries with norms and values most similar to their own → *Cultural Divergence*	**Cultural Dissemination**: Hosts adopt migrants' values → *Cultural Convergence*
Cultural Mixing: Migrants bring their culture to the destination country → *Cultural Convergence*	**Cultural Assimilation**: Migrants adopt host-country values → *Cultural divergence*
	Cultural Remittances: Migrants remit host-country culture back home → *Cultural Convergence*

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Evidence for channels

Evidence of Cultural Selection:

- ▶ On political views (or "exit")
  - ▶ Hirschman's exit and voice (1970, 1993)
  - ▶ From exodus to exitus: Germany 1848-1933 (Barsbai and Rapoport, 2020)
- ▶ On individual values / social norms
  - ▶ Italian students self-select out of Southern Italy on "civicness" (non-cheating) - Casari et al. (2019)
  - ▶ Swedish emigrants self-selected on individualism (Beck-Knudsen, 2020)
  - ▶ Religion: Catholics in Utah are more fundamentalist
- ▶ On fertility preferences (Livi Bacci, 2012)

Evidence for channels

International rural-to-rural migration ... required stable families with large numbers of children. Families of that sort ... were well suited to the destination countries where land was abundant and so a large family of workers an advantage. Similarly advantageous were the traditional social and family values of those migrants. [On the contrary] Migration from the countryside to cities and industrial regions, where workers were employed primarily as wage workers in manufacturing and construction, favored instead a different profile, namely, ... individuals whose family ties were looser, ... nuclear families able to carefully plan births - Livi Bacci (2012)

Evidence for channels

Evidence of Cultural Mixing:

- Even if people change locations they take with them values and beliefs from their origin.
    - "Culture propagates and evolves across generations" Fernandez (2007, 2012)
- Used in the literature as evidence of cultural persistence
    - Gender attitudes (Almond et al., 2013)
    - Family ties and living arrangements (Giuliano, 2007)
    - Preference for redistribution (Luttmer and Singhal, 2011)
    - Differences in persistence by topic (Giavazzi et al., 2019)

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Evidence for channels

Evidence of Cultural Assimilation:

▶ Adoption of host country's customs, values and norms:
   ▶ Abramitzky et al. (2018): cultural assimilation (adoption of "American sounding" names) in the US during the age of mass migration. Similarly, Fouka et al., 2022; Saavedra 2021; Biavaschi et al. 2017
   ▶ Norris & Inglehart (2012): assimilation of Muslims in the United States
   ▶ Blau et al. (2011): gender norms and change in female labor participation over time
   ▶ Diehl & Schell (2006): assimilation of Turkish labor migrants in Germany

Evidence for channels

Evidence of Cultural Dissemination:

- Multiculturalism, hybridization of culture and the diffusion of values from immigrants to natives
    - C. Hirschman (2013): contribution of immigrants to American culture
    - Miho, Jarotschkin & Zhurarvskaya (2020): populations adopted gender values from deported immigrants in Stalin's Russia
    - Giuliano & Tabellini (2020): dissemination of preferences for redistribution in the US
- In the public debate:
    - Collier (2014): the dilution of the host country's culture
    - Borjas (2015): "bad" culture, institutions, and norms imported and propagated by migrants

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Evidence for channels

Evidence for Cultural Remittances:

- ▶ Emigrants remit values, norms and institutional knowledge back to their home communities
    - ▶ Dominican diaspora in Boston and their home communities, Levitt (1998), Levitt & Lamba-Nieves (2011)
    - ▶ Social distancing during Covid from US to Mexico, Tian et al., 2022
- ▶ Political Remittances
    - ▶ Barsbai et al. (2017) for Moldova
    - ▶ Batista and Vicente (2011) for Cape Verde
    - ▶ Chauvet and Mercier (2014) for Mali
- ▶ Malthusian Remittances
    - ▶ Fargues (2007) on Morocco vs. Egypt; Bertoli and Marchetta (2015) on Egypt.
    - ▶ 19th century France, Daudin, Franck and Rapoport (2019)
    - ▶ Godloton and Theoharides (2022)

Migration-based cultural change

Aim of this paper is to:

1. Propose a simple model of migration-based cultural change and discuss the conditions under which we expect cultural convergence or divergence

2. Develop a set of cultural proximity measures along different statistical and topical dimensions

3. Empirically test the model's predictions with data from the World Value Survey and World Bank bilateral migration data

4. Point to dominant mechanisms of migration-based cultural change (who influences whom?)

Rapoport, Sardoschau, Silve   Migration and Cultural Change

The Model

We bring together the mechanisms in a unified theory:

Statics: Compositional Model (COM)	Dynamics: Diffusion mechanisms
Mixing **Selection**	**Dissemination (DSM)** **Assimilation (ASM)** **Remittances (REM)**

$\rightarrow$ All mechanisms are at play simultaneously and interact with one-another. They deliver distinctive predictions that we can then test empirically.

The compositional model (COM)

Agents from country A consider migrating to country B

- ▶ Individuals expect a net economic gain from migration: g with cumulative distribution $\mathcal{G}$
- ▶ Individuals are homophilic and can either expect a cultural gain or loss from migration $f(q^B) - f(q^A)$, where f transforms cultural tastes into utility units (quasi-linear utility)
- ▶ With a weight β on economic gain, an individual migrates if:
$$\beta g + (1-\beta)(f(q^B) - f(q^A)) > 0$$

Rapoport, Sardoschau, Silve   Migration and Cultural Change

The compositional model (COM)

The proportion of type-i individuals possibly interested to migrate is

$$1 - \mathcal{G}_i \equiv 1 - \mathcal{G}\left(\frac{1-\beta}{\beta}(f(q^A) - f(q^B))\right)$$

Similarly, the proportion of type-j individuals

$$1 - \mathcal{G}_j \equiv 1 - \mathcal{G}\left(\frac{1-\beta}{\beta}(f(1-q^A) - f(1-q^B))\right)$$

Rapoport, Sardoschau, Silve   Migration and Cultural Change

The compositional model (COM)

The probability that a given migrant is of type i is

$$\pi \equiv \pi_i(q^A, q^B) = \frac{q^A(1 - \mathcal{G}_i)}{q^A(1 - \mathcal{G}_i) + (1 - q^A)(1 - \mathcal{G}_j)} \in [q^A, 1]$$

With n the relative size of country B, we have the following dynamics

$$\begin{cases} \dot{q}^A = q^A - \pi \\ \dot{q}^B = \frac{\pi - q^B}{n} \end{cases}$$

The equilibrium is reached when

$$\mathcal{G}_i = \mathcal{G}_j = 1$$

no one wants to migrate

Rapoport, Sardoschau, Silve   Migration and Cultural Change

The compositional model (COM)

Suppose $\beta = 0$: only cultural homophily drives the decision to migrate. Assuming type-i is more frequent in B than in A.

- ▶ Type-i individuals migrate, type-j individuals do not
- ▶ Cultural Selection $\rightarrow$ *Cultural Divergence*

Suppose $\beta = 1$: only economic gain drives the decision

- ▶ Migrants reflect the cultural mix at home
- ▶ Cultural Mixing $\rightarrow$ *Cultural Convergence*

> ### Prediction COM
>
> Cultural convergence is stronger for higher values of β, ie. when economic motives are more important (relative to cultural motives).

What if economic gains and cultural types are not independent?

- ▶ If minority types i have a larger economic benefit from migration $\implies$ mimic the selection effect
- ▶ If minority types i have a smaller economic benefit from migration $\implies$ counteracts selection, reinforces mixing
- ▶ May change the direction of convergence / divergence
- ▶ ... but not the comparative static prediction on β

$\implies$ Overall: benign assumption, large gain in simplicity

Dynamics of cultural diffusion

▶ Intergenerational transmission of culture modeled following Bisin & Verdier (QJE, 2000)

▶ Extended to migration in a two country setting, assuming for simplicity that the migration decision is based on current (not future) cultural compositions – see Appendix A for a full discussion.

▶ 3 distinctive mechanisms: dissemination (DSM), assimilation (ASM), and cultural remittances (REM)

Rapoport, Sardoschau, Silve   Migration and Cultural Change

The dissemination mechanism (DSM)

- type-i host parent socializes offspring with probability τ_i
- with proba $1 - \tau_i$, offspring finds a role model elsewhere
  - either in the native population with proba η^h: type i with proba q^h, type j with proba $1 - q^h$
  - or in the migrant population with proba $1 - \eta^h$: type i with proba π, type j with proba $1 - \pi$
  - Overall, offspring picks a type-i role model with proba $\chi^h(q^h) \equiv (1 - \eta^h)\pi + \eta^h q^h$

Rapoport, Sardoschau, Silve   Migration and Cultural Change

The dissemination mechanism (DSM)

The program of a type-i individual is

$$\max_{\tau_i} \left(\tau_i + (1 - \tau_i)\chi^h \right) V_{ii} + (1 - \tau_i)(1 - \chi^h)V_{ij} - H(\tau_i)$$

And the program of a type-j individual is similar. We derive equilibrium efforts $\tau_i(\chi^h)$ and $\tau_j(\chi^h)$. The cultural equilibrium q^{h*} can be characterized by:

$$\frac{q^{h*}}{1 - q^{h*}} \frac{1 - \chi^h(q^{h*})}{\chi^h(q^{h*})} \frac{1 - \tau^i(\chi^h(q^{h*}))}{1 - \tau^j(\chi^h(q^{h*}))} = 1$$

Rapoport, Sardoschau, Silve   Migration and Cultural Change

The dissemination mechanism (DSM)

The previous implicit characterization of the equilibrium allows to derive the following prediction from the comparative statics:

► $\frac{\partial q^{h*}}{\partial \pi} > 0$: the stronger the selection of migrants, the more likely divergence is.

Prediction DSM

Cultural convergence is stronger for higher values of β, ie. when economic motives are more important (relative to cultural motives).

► Note that this is the same prediction as in COM

Rapoport, Sardoschau, Silve   Migration and Cultural Change

The assimilation mechanism (ASM)

Same idea, with slightly different starting assumptions

- ▶ migrant offspring adopt native role models with proba η^m
- ▶ cultural mix among host natives remains the same, q^h

$\rightarrow$ The home country diverges mechanically, the host population is unaffected, and the migrant group is pulled towards the host cultural mix.

$\rightarrow$ Not the most insightful mechanism for our purpose (simply an attenuation of mixing and dissemination).

Rapoport, Sardoschau, Silve Migration and Cultural Change

The cultural remittances mechanism (REM)

Same idea, with slightly different starting assumptions

- ▶ home offspring adopt migrant role models with proba $1 - \eta$
- ▶ we focus on the cultural mix q at home
- ▶ home offspring picks a type-i role model with proba $\chi(q) \equiv (1 - \eta)\pi + \eta q$, such that $q < \chi < \pi$

With equilibrium efforts $\tau_i(\chi)$ and $\tau_j(\chi)$, the cultural equilibrium q^* can be characterized by:

$$\frac{q^*}{1 - q^*} \frac{1 - \chi(q^*)}{\chi(q^*)} \frac{1 - \tau^i(\chi(q^*))}{1 - \tau^j(\chi(q^*))} = 1$$

Rapoport, Sardoschau, Silve   Migration and Cultural Change

The cultural remittances mechanism (REM)

The previous implicit characterization of the equilibrium allows to derive the following prediction from the comparative statics:

▶ $\frac{\partial q^*}{\partial \pi} > 0$: the stronger the cultural selection of migrants, the stronger the cultural convergence between countries.

Prediction REM

Cultural convergence is *weaker* for higher values of β, ie. when economic motives are more important (relative to cultural motives).

▶ Note that this prediction is the *opposite* of COM and DSM

Data

- ▶ World Value Survey
  - ▶ Unbalanced panel of 6 waves, 1981 to 2014
  - ▶ Questions on attitudes, norms, and beliefs

- ▶ Bilateral Migration Data
  - ▶ World Bank 1960 to 2010
  - ▶ Interpolation between decades to match WVS waves

- ▶ Bilateral Trade Data UN COMTRADE
- ▶ GDP Gap constructed from World Bank Data

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Data

Most important value transmitted to children:
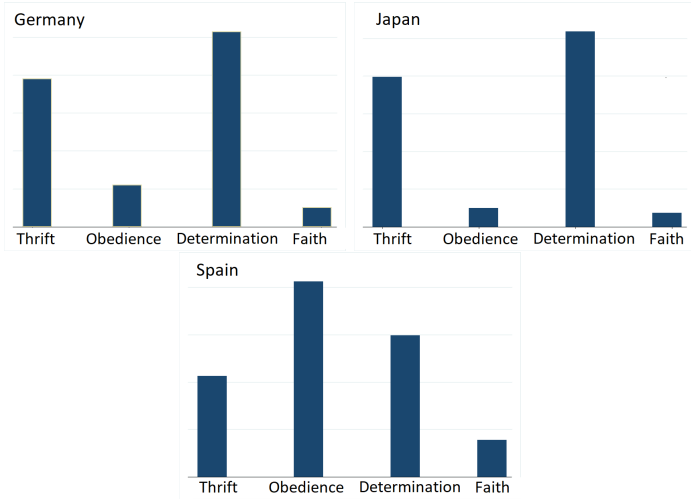
Data

Values to Children (other dimensions include priorities in life, trust, gender equality, freedom)

Principal Component: Values to Children WVS wave 6

Rapoport, Sardoschau, Silve   Migration and Cultural Change
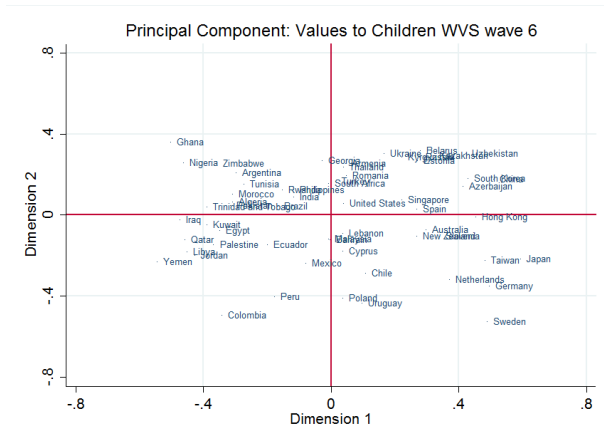
Cultural similarity

We construct the first global data set on **time-varying, bilateral cultural similarity**, using three different statistical measures:

Euclidean $\quad D_E = \sqrt{\sum_{i=1}^{d}(P_i - Q_i)^2}$

Canberra $\quad D_{Ca} = \sum_{i=1}^{d} \frac{|P_i - Q_i|}{P_i + Q_i}$

Herfindahl $\quad D_I = \sum_{i=1}^{d} P_i * Q_i$

$\rightarrow$ Includes WVS questions on values transmitted to children, priorities in life, generalized trust, gender equality, and control over life (around 36 dimensions)

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Specification

$$CS_{ijt} = \beta_0 + \beta_1 Mig_{ij,t-\Delta} + \beta_2 X'_{ij,t-\Delta} + \theta_{ij} + \theta_{it} + \theta_{jt} + \varepsilon_{ijt}$$

▶ CS_{ijt} = index of cultural similarity between country i and j at time t

▶ Our coefficient of interest is β_1:
  ▶ Convergence with $\beta_1 > 0$ and divergence with $\beta_1 < 0$
  ▶ We can only capture the aggregate effect (reduced form)

▶ $X'_{ij,t-\Delta}$ = vector of controls includes bilateral trade and bilateral per capita income differences

▶ Fixed Effects: country pair, host-year, home-year = exploit variation within country-pair over time

A discussion of identification

Unobserved heterogeneity

- ▶ Origin and destination time FE: demographic and socio-economic environment, as well as country-specific trends in migration policy, natural disasters, technological change etc.

- ▶ Bilateral FE: ethnic, linguistic or religious proximity, past common (e.g., colonial) history (main drivers of bilateral migration, see Mayda (2010))

- ▶ Time-varying bilateral controls: income differences and bilateral trade (as good/bad control), FDI (for robustness)

Rapoport, Sardoschau, Silve   Migration and Cultural Change

A discussion of identification

Reverse causality

- ▶ Lag migration by 5 years: migrants would have to be able to anticipate cultural changes both at origin and at destination over several years before they move

- ▶ Lagged dependent variable: controlling for cultural similarity at time of migration

Rapoport, Sardoschau, Silve   Migration and Cultural Change

A discussion of identification

Instrumenting bilateral migration?

- ▶ Endogeneity of *size* and *cultural composition* of migrants
- ▶ Size is observable, cultural composition is not
- ▶ Issues with instrumenting size in this context
  - → IV gives a LATE: compliers may be differently culturally selected and therefore give different results based on IV used. We could only make vague inferences about how a specific IV impacts cultural selection of compliers
- ▶ We provide a gravity instrument that confirms the results but we refrain from over-interpreting this
- ▶ Instead, we rely on theory to discriminate between candidate mechanisms

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Main Results

	(1) **Euclidean**	(2) **Herfindahl**	(3) **Canberra**
Migration	0.029**	0.0023**	0.006
R2	0.97	0.98	0.96
N	5,875	5,875	5,875
Controls / FE	All	All	All

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All three cultural similarity measures are reported,including all fixed effects and time-varying bilateral control variables, Trade and GDP Gap. Constant is not reported. Migration is the log of the migrant stock at time $t - \Delta$ and Trade is the bilateral trade flow at time $t - \Delta$, GDP Gap is bilateral per capita difference at $t - \Delta$.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Main Results: Balanced Panel

	(1) Euclidean	(2) Herfindahl	(3) Canberra
Migration	0.058***	0.040***	0.038**
	(0.015)	(0.012)	(0.019)
R2	0.93	0.96	0.91
N	1,359	1,359	1,359
Controls / FE	All	All	All

This table selects country pairs that remain in the data set for the same three waves of the WVS. In particular, we only include country pairs that were in the waves of 1995, 2005, and 2010. We choose these specific waves to maximize the number of country pairs that appear repeatedly and at least in three waves. All three cultural similarity measures are reported, introducing all fixed effects and time-varying controls. Countries in the panel include: Argentina, Australia, Chile, China, Colombia, Georgia, Germany, India, Japan, Korea, Mexico, New Zealand, Peru, Poland, Romania, Russian Federation, Slovenia, South Africa, Spain, Sweden, Turkey, Ukraine, United States, and Uruguay. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Main Results: Migration Corridors

	Euclidean		
	North-North	*North-South*	*South-South*
	(1)	(2)	(3)
Migration	-8.9e-3	0.046**	0.030*
	(0.074)	(0.019)	(0.017)
R^2	0.96	0.99	0.96
Obs.	621	2670	2584
Controls / FE	All	All	All

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Standard errors in parentheses. Controls: Trade and GDP Gap. FE: Destination-year, origin-year, bilateral. North is defined as a country that is member of the OECD in 2014. South is the rest of the world.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Main Results: Taking Stock

What have we learned so far?

▶ Overall, countries seem to converge

▶ Migration is a strong and robust driver of convergence

So far, this is compatible with COM, DSM and REM

▶ Is **cultural mixing** the driver behind convergence (COM), reinforced by **dissemination** (DSM) or is it **cultural remittances** (REM)?

Let us discriminate between the various predictions to assess empirically the validity of the various theoretical effects

Static or dynamic convergence?

| | 10-year lag | | | no lag | | |
	(1) Euclidean	(2) Herfindahl	(3) Canberra	(4) Euclidean	(5) Herfindahl	(6) Canberra
Migration	0.024*	0.027**	0.040***	0.011	0.006	0.016
	(0.013)	(0.011)	(0.014)	(0.011)	(0.009)	(0.012)
R2	0.97	0.98	0.96	0.97	0.98	0.95
N	5,873	5,873	5,873	6,022	6,022	6,022
Controls / FE	All	All	All	All	All	All

Results for different lags of our main dependent variable: the log bilateral migrant stock. Our baseline specification uses the 5-year lag for migration and for the control variables trade and gdp gap. In columns one to three, use the ten-year lag of migration for all three cultural similarity measures, including the full set of fixed effects (destination-year, origin-year, bilateral) and time-varying control variables with the respective lags (ten-year lag for trade and gdp gap). In columns four to six, we repeat the same exercise with no lag, that is the instantaneous bilateral migrant stock, e.g. the dependent variable (cultural similarity) is measured in the same period as the independent variable (again with trade and gdp gap in the same year). Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Static or dynamic convergence?

	(1)	(2)	(3)	(4)	(5)
Euclidean cultural similarity with migrants					
Migration	0.064***	0.074***	-0.020	0.032	0.007
	(0.009)	(0.007)	(0.074)	(0.084)	(0.148)
R2	0.04	0.63	0.99	1.00	1.00
N	1,475	1,475	1,475	1,475	838
Euclidean cultural similarity without migrants					
Migration	0.064***	0.074***	-0.012	0.031	0.003
	(0.008)	(0.007)	(0.073)	(0.084)	(0.147)
R2	0.04	0.63	0.99	1.00	1.00
N	1,475	1,475	1,475	1,475	838
Dest.-year FE		X		X	X
Orig.-year FE		X		X	X
Bilateral FE			X	X	X
Controls					X

This table includes only countries and WVS waves (two and three) for which information on respondent's country of birth was available. Only nine countries have information on respondents country of birth for two waves. Therefore, the analysis is limited to a rather small subsample for a short period of time (losing about 80% of our observations). We limit this analysis to one similarity measure, the Euclidean similarity measure and successively introduce all fixed effects and control variables, following the baseline regression in Table 1.Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Static or dynamic convergence?

> ### COM vs. REM
>
> COM is essentially static, and DSM and REM essentially dynamic. In COM, convergence comes from a mixing effect at destination.

1. Effect of migration unfolds over time
   → **Evidence in favor of REM / DSM over COM**
2. We exclude immigrant respondents from WVS
   → **Evidence in favor of REM / DSM over COM**
3. Dynamic convergence is still compatible with cultural dissemination
   → **We now try to distinguish between REM & DSM**

Economic vs. cultural gains from migration

> ### DSM vs. REM
>
> Higher economic gains from migration / higher initial cultural similarity
>
> ▶ increase convergence (DSM)
>
> ▶ decrease convergence (REM)

A less culturally selected migrant pool (high economic gains, high cultural similarity) will lead to more convergence under DSM and less convergence under REM, and conversely.

Economic vs. cultural gains from migration

Individual level: skills

	(1) **Euclidean**	(2) **Herfindahl**	(3) **Canberra**
low skilled	-0.085**	-0.065*	-0.069
	(0.043)	(0.037)	(0.065)
high skilled	0.082*	0.058$^+$	0.032
	(0.044)	(0.038)	(0.067)
R2	0.99	0.99	0.96
N	1,717	1,717	1,717
Controls / FE	All	All	All

Results from our baseline specification by skill level, including all FEs and time-varying controls. We distinguish between skilled and unskilled labor, categorized as high-school degree and above from the IAB data set, which contains information on education levels of the migrant stock in 14 OECD destination countries for the years 1980 to 2010 in five-year intervals. Since we use a different migration data set (smaller time frame and fewer countries) our number of observation reduce substantially. Standard errors in parentheses. $+ p < 0.15$; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Economic vs. cultural gains from migration

Macro level: culturally close, economically distant

	(1)	(2)	(3)
	Euclidean	**Herfindahl**	**Canberra**
Migration	0.068***	0.043***	0.058***
	(0.017)	(0.013)	(0.020)
Migration*CSED	-0.041+	-0.014	-0.129***
	(0.028)	(0.021)	(0.041)
R2	0.93	0.96	0.91
N	1,359	1,359	1,359
N CSED	392	492	403
Controls / FE	All	All	All

Results from our baseline specification by initial cultural similarity and economic distance, including all fixed effects and time-varying controls. *CSED* is a bilateral dummy variable that indicates whether a country pair is part of the sample of country pair for which we expect a less culturally selected migrant pool (e.g. above median culturally similar for the respective measures and simultaneously above median economically distant as gdp per capita difference, both measured in the year 1995). We use the panel sample constructed for Table ?? to ensure coherence in the median cut-off for all country pairs. Standard errors in parentheses. $+\ p < 0.15$; $*\ p < 0.1$; $**\ p < 0.05$; $***\ p < 0.01$

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Economic vs. cultural gains from migration

1. Cultural selection at the individual level increases convergence
   $\rightarrow$ **Evidence in favor of REM over DSM**
2. Cultural selection at the country level increases convergence
   $\rightarrow$ **Evidence in favor of REM over DSM**

Let us run a few more plausibility checks through corollaries of our model.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Plausibility Checks

- Country pairs that are more connected also converge more culturally
    - Country pairs with bilateral remittance flows, converge more
    - Countries with more bilateral travel, converge more
    - Countries with more bilateral communication (interaction between mobile phone coverage, internet broadband coverage, international calls), converge more
- Countries with more concentrated emigration patterns/destinations converge more (not true for concentrated origins)

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Conclusion

▶ Migration affects cultural formation in both sending in receiving countries through various mechanisms.

▶ The net effect of migration on cultural similarity is positive: migration favors cultural convergence.

▶ Our results are inconsistent with dissemination as the main channel of cultural convergence (against the populist narrative) but support **cultural remittances**.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Additional tables

Table: Baseline - migration and cultural similarity

	(1)	(2)	(3)	(4)	(5)
Euclidean					
Migration	0.054***	0.083***	0.083***	0.022**	0.029**
	(0.004)	(0.004)	(0.010)	(0.009)	(0.012)
R2	0.03	0.52	0.91	0.97	0.97
N	7,486	7,486	7,486	7,486	5,875 3
Herfindahl					
Migration	0.030***	0.066***	-0.048***	0.017**	0.023**
	(0.004)	(0.003)	(0.013)	(0.007)	(0.010)
R2	0.01	0.70	0.86	0.98	0.98
N	7,486	7,486	7,486	7,486	5,875
Canberra					
Migration	0.052***	0.084***	0.056***	0.017	0.006
	(0.004)	(0.004)	(0.013)	(0.011)	(0.013)
R2	0.03	0.60	0.86	0.95	0.96
N	7,486	7,486	7,486	7,486	5,875
Dest.-year FE		X		X	X
Orig.-year FE		X		X	X
Bilateral FE			X	X	X
Controls					X

Table 1 shows the main results of this analysis. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All three cultural similarity measures are reported, successively introducing all fixed effects. First column of each measure shows results with no fixed effects, second column introduces origin and destination fixed effects, column three shows specification with only bilateral fixed effects, and the the fourth column shows results with country-pair, destination-time and origin-time fixed effects. Column 5 includes time-varying bilateral control variables, Trade and GDP Gap. Constant is not reported. Migration is the log of the migrant stock at time $t - \Delta$ and Trade is the bilateral trade flow at time $t - \Delta$, GDP Gap is bilateral per capita difference at $t - \Delta$. In our baseline regression Δ represents a five year lag. Observations are reduced by about 2,400 observations since there is no information for some country pairs on bilateral trade and gdp per capita.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Additional tables

Table: Accounting for methodology change in migration data

	(1)	(2)	(3)
	Euclidean	**Herfindahl**	**Canberra**
Migration	0.033***	0.024**	0.003
	(0.012)	(0.010)	(0.014)
R2	0.97	0.98	0.96
N	5,588	5,588	5,588
Dest.-year FE	X	X	X
Orig.-year FE	X	X	X
Bilateral FE	X	X	X
Controls	X	X	X

Table 2 shows our baseline specification with all time-varying controls and the full set of fixed effects for the sub-sample of countries for which we observe non-zero migration in 2010. We lose about 300 observations. This number of observations lost is relatively small since the data set is comprised of countries for which we have information on beliefs and preferences from the World Value Survey and for which bilateral trade and GDP data is available. This already restrict our sample and therefore limits the number of country pairs for which the change in methodology from 2000 to 2010 was relevant.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Additional tables

Table: Plausibility checks - diverse and concentrated origin countries

		Diverse origins			Concentrated origins	
	(1)	(2)	(3)	(4)	(5)	(6)
	Euclidean	**Herfindahl**	**Canberra**	**Euclidean**	**Herfindahl**	**Canberra**
Migration	0.026	0.024+	-0.008	0.024+	0.018+	0.008
	(0.019)	(0.016)	(0.023)	(0.016)	(0.013)	(0.017)
R2	0.98	0.98	0.96	0.96	0.98	0.96
N	3,215	3,215	3,215	2,660	2,660	2,660
Dest.-year FE	X	X	X	X	X	X
Orig.-year FE	X	X	X	X	X	X
Bilateral FE	X	X	X	X	X	X
Controls	X	X	X	X	X	X

Table 3 shows results from our baseline specification, including all fixed effects and time-varying controls. We split the sample along the median value of an immigration concentration index similar to the index in Table 5. The index measures for each source country the overall concentration of origin countries. Standard errors in parentheses. $+$ $p < 0.15$; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Plausibility checks

Table: Plausibility checks - intensity of interaction proxied by remittances

	Remittances			No remittances		
	(1)	(2)	(3)	(4)	(5)	(6)
	Euclidean	**Herfindahl**	**Canberra**	**Euclidean**	**Herfindahl**	**Canberra**
Migration	0.044***	0.037***	0.027$^+$	0.016	0.020	0.012
	(0.015)	(0.013)	(0.018)	(0.019)	(0.016)	(0.021)
R2	0.97	0.98	0.95	0.98	0.98	0.97
N	2,975	2,975	2,975	2,297	2,297	2,297
Dest.-year FE	X	X	X	X	X	X
Orig.-year FE	X	X	X	X	X	X
Bilateral FE	X	X	X	X	X	X
Controls	X	X	X	X	X	X

Table 4 hows results from our baseline specification, including all fixed effects and time-varying controls. We split the sample into country pairs that have remittance flows and those that do not have recorded remittance flows to proxy intensity of interaction between diaspora and home community. Standard errors in parentheses. $+$ $p < 0.15$; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Rapoport, Sardoschau, Silve   Migration and Cultural Change

Plausibility checks

Table: Plausibility checks - diverse and concentrated emigration destinations

	Diverse destinations			Concentrated destinations		
	(1)	(2)	(3)	(4)	(5)	(6)
	Euclidean	**Herfindahl**	**Canberra**	**Euclidean**	**Herfindahl**	**Canberra**
Migration	-0.004	-0.009	-0.026	0.050***	0.040***	0.022
	(0.023)	(0.019)	(0.026)	(0.014)	(0.012)	(0.016)
R2	0.98	0.99	0.97	0.96	0.97	0.95
N	2,876	2,876	2,876	2,999	2,999	2,999
Dest.-year FE	X	X	X	X	X	X
Orig.-year FE	X	X	X	X	X	X
Bilateral FE	X	X	X	X	X	X
Controls	X	X	X	X	X	X

Table 5 shows results from our baseline specification, including all fixed effects and time-varying controls. We split the sample along the median value of an emigration concentration index specifically created for this analysis. The index measures for each source country the overall concentration of destination countries. Source countries with a large share of their emigrants residing in only few destination countries will receive a high score (Mexico's score is at 3.88) and countries that have a very diverse set of destination countries receive a low score (the US's score is at 0.60, France's 0.09, the median concentration index lies at 0.53). Standard errors in parentheses. $+ \ p < 0.15$; $* \ p < 0.1$; $** \ p < 0.05$; $*** \ p < 0.01$.

Rapoport, Sardoschau, Silve   Migration and Cultural Change