



Hosted by Financial Markets Group (FMG) Culture, Discrimination, and Economic Exchange

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Culture, Discrimination and Economic Exchange

Daniel Paravisini

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Culture and Economic Activity

- The notion that culture may have important consequences for economic development has long being a matter of study in social sciences
 - ▶ For example, Weber's *The Protestant Ethic and the Spirit of Capitalism* (1905) argued that puritan ethics shaped the development of capitalism
 - ▶ People of certain religious beliefs were more inclined towards hard work, productive investment, and capital accumulation, all of which are necessary ingredients for economic development and growth
- Only recently the empirical literature in economics has begun testing whether culture affects economic exchange (and how)

An early example

- Barro and McCleary (2003): “Religion and Economic Growth”
 - ▶ Estimate cross-country regressions of growth on:
 - ★ Religious beliefs, attendance at religious services, etc.
 - ▶ “We find that economic growth responds positively to the extent of religious beliefs, notably those in hell and heaven, but negatively to church attendance. That is, growth depends on the extent of believing relative to belonging.”
- Correlations are suggestive, but they hardly represent proof that religious beliefs **affect** growth
 - ▶ The protestant ethic may make people work harder, but hard-working people may be more likely to become protestant
 - ▶ Searching for a **counterfactual** is the common theme of work that followed

Today's Lecture

- How can we evaluate empirically whether the cultural traits of transacting parties (e.g., language, religious beliefs, ethnicity) affect the quantity and quality of the interaction?
- Start with snapshots of recent work aimed at addressing related questions
- Serves as a motivation for my own work:
 - ▶ “Cultural proximity and loan outcomes,” with Ray Fisman, and Vikrant Vig, forthcoming in the American Economic Review
 - ▶ My agenda: empirical exploration of factors that shape credit markets

Do cultural biases affect economic exchange?

- Guiso, Sapienza and Zingales (2009):
 - ▶ Use **trust** as a measure of culture
- Begin by documenting differences in the level of trust among European managers
- Surveyed 1,016 managers (managing companies under 500 employees) from five major European Community countries:
 - ▶ Great Britain (433 responses), France (127), Germany (135), Italy (185) and Spain (136)

Trust Ranking

- When asked to score fellow managers of different countries on the basis of their trustworthiness, their responses implied the following ranking (where 1 is the best and 5 the worst):

View	Great Britain	France	Germany	Italy	Spain
British	1	4	2	5	3
French	4	2	1	5	3
German	2	3	1	5	4
Italian	3	2	1	4	5
Spanish	2	4	1	5	3

- **Rows:** the first row tells us that British managers rank other British managers as the most trustworthy, and Italian managers as the least

Trustworthiness Levels

- When asked to score fellow managers of different countries on the basis of their trustworthiness their responses implied the following ranking (where 1 is the best and 5 the worst):

View	Great Britain	France	Germany	Italy	Spain
British	1	4	2	5	3
French	4	2	1	5	3
German	2	3	1	5	4
Italian	3	2	1	4	5
Spanish	2	4	1	5	3

- **Columns:** Independently of who you ask, managers from some countries are perceived as being more trustworthy than others

Trust Home-Bias

- When asked to score fellow managers of different countries on the basis of their trustworthiness their responses implied the following ranking (where 1 is the best and 5 the worst):

View	Great Britain	France	Germany	Italy	Spain
British	1	4	2	5	3
French	4	2	1	5	3
German	2	3	1	5	4
Italian	3	2	1	4	5
Spanish	2	4	1	5	3

- ▶ **Diagonal:** Home-country bias, everyone ranks fellow countrymen better than what managers from other countries rank them

Bilateral Trust

- When asked to score fellow managers of different countries on the basis of their trustworthiness their responses implied the following ranking (where 1 is the best and 5 the worst):

View	Great Britain	France	Germany	Italy	Spain
British	1	4	2	5	3
French	4	2	1	5	3
German	2	3	1	5	4
Italian	3	2	1	4	5
Spanish	2	4	1	5	3

- **Symmetric Off-Diagonal:** Match-specific attitudes, for example, French mistrust British and vice versa (bilateral trust)

We always have been, we are, and I hope that we always shall be detested in France

Duke of Wellington

- How systematic are these bilateral, match-specific, attitudes?
- What determines them?
- What are their economic consequences?

Fixed-Effects

- We want to distinguish the country-specific components of trust (e.g. Germans are more trustworthy) from the bilateral ones (e.g., the French and British mutually mistrust each other)
- Origin and destination fixed-effects:
 - ▶ **Country-of-destination fixed effects (κ_j)**: capture the common view about the trustworthiness of a country, which may derive from the quality of the law and its enforcement
 - ▶ **Country-of-origin fixed effects (λ_j)**: capture possible systematic differences in the way different populations answer the survey
 - ▶ **Residual (ϵ_{ij})**: measure of bilateral trust

$$Trust_{ij} = \kappa_j + \lambda_j + \epsilon_{ij}$$

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Fixed-Effects

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 - ▶ **Residual** (ϵ_{ij}): measure of bilateral trust

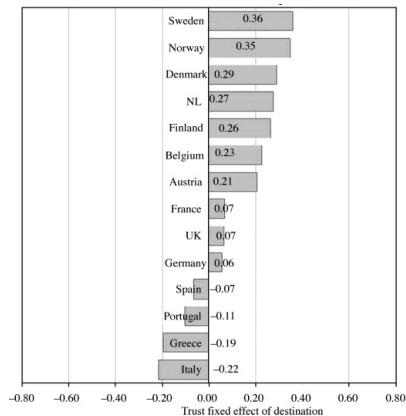
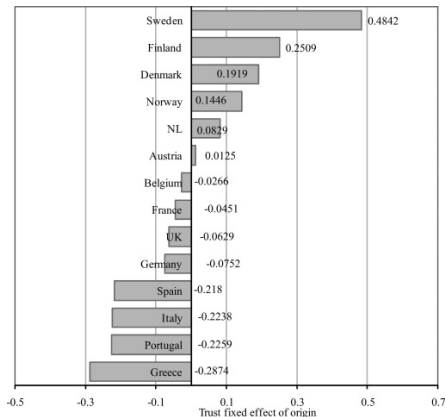
$$Trust_{ij} = \kappa_i + \lambda_j + \epsilon_{ij}$$

Guiso, Sapienza and Zingales (2009)

- Perform this fixed-effects decomposition using the Eurobarometer data:
 - ▶ 17 countries, 1,000 individuals per country
 - ▶ “I would like to ask you a question about how much trust you have in people from various countries. For each, please tell me whether you have a lot of trust, some trust, not very much trust or no trust at all.”

Trust Fixed-Effect of Origin and Destination

$$Trust_{ij} = \kappa_i + \lambda_j + \epsilon_{ij}$$



Note: all relative to Ireland. Source: Guiso, Sapienza and Zingales (2009)

What Explains Bilateral Trust?

- The fixed-effects explain 64% of the variation in trust
- What explains the remaining, match-specific, variation?
- Augment the fixed-effect regression with match specific variables

$$Trust_{ij} = \kappa_i + \lambda_j + \beta X_{ij} + \epsilon_{ij}$$

- ▶ Common language, geographical distance, years at war, genetic and somatic distance...

TABLE III
DETERMINANT OF TRUST

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Common language	0.05 (0.07)	0.09* (0.05)	0.11* (0.06)	0.09* (0.05)	0.08 (0.05)	0.02 (0.06)	0.04 (0.06)	0.05 (0.06)	0.08 (0.06)
Log (distance)	-0.11*** (0.03)	-0.04* (0.02)	-0.05* (0.03)	-0.04 (0.03)	-0.01 (0.02)	-0.01 (0.02)	0.00 (0.03)	0.01 (0.03)	-0.01 (0.03)
Common border	-0.01 (0.05)	-0.05 (0.04)	-0.01 (0.04)	-0.05 (0.04)	-0.04 (0.03)	-0.04 (0.03)	-0.05 (0.04)	-0.05 (0.04)	-0.03 (0.04)
Fraction of years at war (1000–1970)		-1.16*** (0.29)	-1.07*** (0.39)	-1.16*** (0.29)	-1.07*** (0.29)	-1.16*** (0.29)	-1.26*** (0.39)	-1.26*** (0.39)	-1.07*** (0.39)
Religious similarity		0.15*** (0.04)	0.24*** (0.05)	0.15*** (0.04)	0.15*** (0.04)	0.11** (0.04)	0.13*** (0.05)	0.13*** (0.05)	0.15*** (0.05)
Somatic distance		-0.06*** (0.01)		-0.06*** (0.01)	-0.05*** (0.01)	-0.04*** (0.01)	-0.04*** (0.01)	-0.04*** (0.01)	-0.03*** (0.01)
Genetic distance			-10.00* (5.94)	0.06 (5.07)					
Differences in GDP per capita (percentage)					-0.14*** (0.04)	-0.14*** (0.03)	-0.13*** (0.03)	-0.13*** (0.03)	-0.09** (0.03)
Same legal origin						0.07** (0.03)	0.05 (0.03)	0.05 (0.03)	0.05 (0.04)
Linguistic common roots							0.20* (0.11)	0.20* (0.11)	0.21* (0.11)
Transportation costs* 1,000								-0.58 (1.00)	-1.05 (0.96)
Press coverage									-0.73** (0.34)
Observations	207	207	207	207	207	207	180	180	154
R ²	.772	.840	.806	.840	.854	.858	.832	.832	.837

Notes. The dependent variable is the average trust across individuals of a given country toward citizens of other countries. To appropriately estimate the standard errors, we first regressed the observations on year fixed effects, and then we took the residual and collapsed the observations by year. Trust is calculated by taking the average response to the following question: "I would like to ask you a question about how much trust you have in people from various countries. For each, please tell me whether you have a lot of trust, some trust, not very much trust, or no trust at all." The answers are coded in the following way: 1 (no trust at all), 2 (not very much trust), 3 (some trust), 4 (a lot of trust). All other variables are reported in the notes to Table II. The regressions include country-of-origin and country-of-destination fixed effects. Spatial corrected standard error (see Conley [1999]) are reported in parentheses.

Coefficient is statistically different from zero at the ***1%, **5%, and *10% level.

Finding: Bilateral Trust is Associated with...

- Positively: religious similarity, linguistic common roots
- Negatively: fraction of years at war (1000-1970), somatic distance (height, hair pigmentation, and cephalic index), differences in GDP per capita

Bilateral Trust and Exports

- Does bilateral trust (or lack thereof) predict economic exchange (exports)?

$$\ln(\text{Exports}_{jit}) = \kappa_i \times \text{Year}_t + \lambda_j \times \text{Year}_t + \beta \text{Trust}_{ij} + \delta X_{ij} + \epsilon_{ijt}$$

- ▶ Exports_{jit} : exports of country j in country i in year t
- ▶ This is the standard **gravity equation** augmented with the trust measure

TABLE IV
EFFECT OF TRUST ON TRADE

	OLS (1)	OLS (2)	OLS (3)	OLS (4)	IVGMM (5)	OLS (6)
Mean trust of people in importing country to people in exporting country	0.36** (0.17)	0.29* (0.17)	0.25 (0.19)	0.34** (0.16)	1.20*** (0.20)	0.19 (0.22)
Interaction between trust and diversified good						0.83*** (0.05)
Common language	0.58*** (0.22)	0.32** (0.16)	0.37** (0.16)	0.82*** (0.21)	0.94*** (0.14)	1.04*** (0.27)
Log (distance)	-0.31*** (0.09)	-0.43*** (0.09)	-0.43*** (0.09)	-0.57*** (0.10)	-0.61*** (0.07)	-0.73*** (0.12)
Common border	0.49*** (0.11)	0.43*** (0.10)	0.41*** (0.11)	0.41*** (0.10)	0.36*** (0.06)	0.35*** (0.13)
Press coverage	0.45 (1.05)	-0.03 (0.93)	-0.09 (0.94)	-1.34 (1.0)	-0.89 (0.60)	-2.83** (1.12)
Transportation costs	-1.81** (0.79)	-0.33 (0.74)	-0.28 (0.76)	0.10 (0.73)	0.63 (0.52)	-1.83 (1.17)
Same legal origin		0.45*** (0.10)	0.43*** (0.10)	0.36*** (0.11)	0.24*** (0.07)	0.57*** (0.15)
Linguistic common roots			0.09 (0.28)			
Correlation of consumption between the two countries				-0.95 (0.68)	-1.05*** (0.37)	-1.82** (0.89)
Exporting-country fixed effects*years	YES	YES	YES	YES	YES	YES
Importing-country fixed effects*years	YES	YES	YES	YES	YES	YES
Observations	595	595	573	474	474	951
R^2	.964	.969	.970	.968		.849
Hansen J -statistic					0.090	
χ^2 p -value					.764	
Test of excluded instruments					$F(2,349) = 59.66$	

However...

- Not evidence that trust affects exchange:
 - ▶ It is possible that trade breeds trust
 - ▶ Bilateral trust may capture effect of omitted variables that also affect trade (e.g., the existence of established trading outposts)
 - ▶ Cultural determinants of trust (e.g. commonality of religion) may affect trade directly and not through trust
- How to construct a counterfactual to measure effect of culture?
 - ▶ Match at random individuals performing the same transaction
 - ▶ How does the outcome change when the cultural “distance” between the parties changes

Natural Experiments

- Some institutional settings provide the variation in matching between transacting parties that allows establishing the counterfactual
- Example: Judges and players in sporting events
 - ▶ Judges are randomly assigned to matches
 - ▶ The same player is matched to many judges, and the same judge to many players (judge and player fixed-effects)
- Not an economic transaction, but can plausibly measure discrimination
 - ▶ Discrimination: differential treatment of two individuals with the same productivity due to differences in their gender, ethnicity, religion, etc.

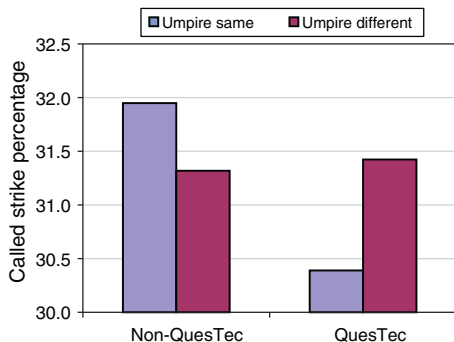
Baseball Strike Calls

- “Strike Three: Discrimination, Incentives, and Evaluation,” Parsons, Sulaeman, Yates, and Hamermesh (2011)
- Setting
 - ▶ Data on 3,524,624 total pitches from for every regular-season MLB game from 2004 to 2008
 - ▶ Four ethnicities: white, Hispanic, black, or Asian.
 - ▶ Focus on called strikes (when the batter does not swing at the throw and the umpire must determine whether it was a good throw)
- **Finding:** Strikes are called less often if the umpire and pitcher do not match race/ethnicity (after removing umpire and pitcher fixed-effects)

Can bias be corrected?

- Some stadiums use a system of computerized cameras (QuesTec) to evaluate the umpires
- **Finding:** Bias reverses when the umpires are monitored

B. Minority pitchers



Does umpire bias affect pitcher behavior?

- Do pitchers play it safe when judged by a biased umpire? Do they take more risks when judged by a positively predisposed umpire?
 - Throws in the red area are more difficult to hit, but the umpire's discretion is more important for determining the outcome
 - Finding:** Pitchers who match the umpire's race/ethnicity throw more often in the red area

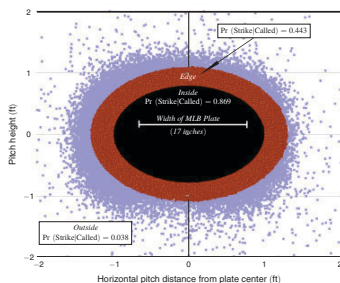


FIGURE 4. CALLED STRIKES BY DISTANCE FROM HOME-PLATE CENTER, 2007–2008 ($N = 144,990$)

Lessons and questions

- Incentives can alter biased behavior
 - ▶ Difficult simply to remove bias (unconscious?), and incentives may create bias in the opposite direction (affirmative action?)
- Behavior adapts strategically in the presence of bias
 - ▶ Productivity measures are also biased
 - ▶ Example: if most umpires are white, white pitchers will make hard-to-hit throws more often and have a higher productivity as a result
- Still open question: if incentives matter, do biases survive in economic exchange (where economic incentives are strong)?
 - ▶ Empirical problem: How to construct the counterfactual in an exchange setting?

One possibility: Audit Studies

- "Race and Gender Discrimination in Bargaining for a New Car," Ayres and Siegelman (1995)
- Audit study design:
 - ▶ Recruited pairs of testers, one of whom is a white male
 - ▶ Trained with identical bargaining strategies
 - ▶ Sent to negotiate for the purchase of a new car at randomly-selected Chicago dealers
 - ▶ Bargained for the same car, at the same dealership
- **Finding:** Evidence of gender and race discrimination
 - ▶ Dealers quoted significantly lower prices to white males than to black or female test buyers

Two Models of Discrimination

- When evaluating discrimination in an economic exchange, it is useful to distinguish between two models of discrimination
 - ▶ Taste-based discrimination
 - ★ Becker (1957): a "taste for discrimination," a disamenity value of engaging in exchange with a party of certain ethnicity, cultural background, gender, etc.
 - ▶ Statistical discrimination
 - ★ Phelps (1972) and Arrow (1973): economic agents use easily observable characteristics, such as race or gender, to infer the expected profitability of an interaction
- Almost impossible to distinguish empirically, but different implications and policy prescriptions

Car Sale example: Interpretations

- Taste-based
 - ▶ Dealers derive disutility when transacting with black or female buyers
 - ▶ Unfair (odious), illegal, inefficient, may be competed away
- Statistical
 - ▶ Based on the history of past transactions, dealers infer that black and female buyers have a higher willingness to pay
 - ▶ Unfair (?), profit-maximizing, will not be competed away
- **Additional finding:** same result for black or female dealers
 - ▶ Suggestive of statistical discrimination, but impossible to say for sure without observing dealers' preferences or expectations

Culture and economic exchange

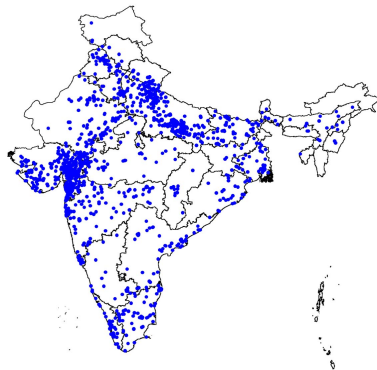
- Sports/setting sale price of a car: zero-sum games
 - ▶ What happens when the potential gains from the interaction are affected by culture?
- A bright side and a dark side of culture
 - ▶ Positive: It may be easier to communicate with, or assess the trustworthiness of, those culturally closer to you
 - ▶ Negative: inefficient favoritism to those of your own culture
- Is it possible to distinguish the pernicious impact of favoritism from the efficiency-enhancing effects of better communication/information?

“Cultural proximity and loan outcomes”

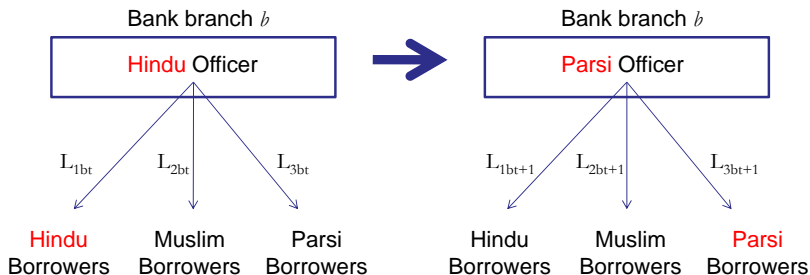
- Paravisini, Fisman and Vig (2014)
 - ▶ Question: Do shared codes, language, religious beliefs, ethnicity between a loan officer and a borrower lead to **better** lending decisions?
- Setting:
 - ▶ Large government bank in India
 - ▶ Data for the 2,000+ branches, personal loans to 2.9 million borrowers between 1999-2005
- Three key features of the setting:
 - 1 **Dyadic** data: religion/caste of all borrowers and loan officers
 - 2 Data on loan characteristics and **performance**
 - 3 Geographic **rotation** policy for loan officers

Rotation and Branch Locations

- After three years in a branch, loan officers are reassigned to a branch that is, on average, 200 Kms away

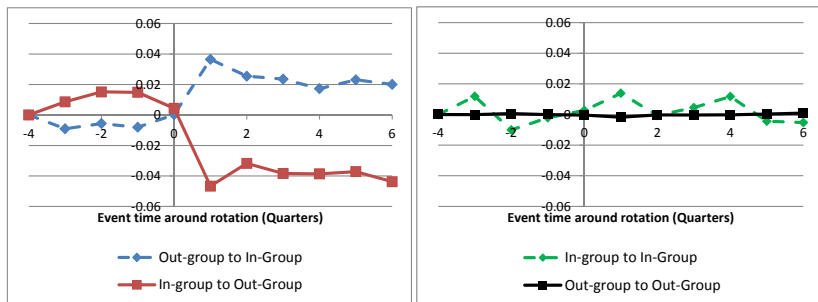


Rotation and In-group Status



- Parsi: transition from out-group to **in-group** officer
- Hindu: transition from **in-group** to out-group officer
- Muslim: no change in in-group status of officer

Share of New Lending to a Group around Rotations



- Blue: out-group to **in-group** officer
- Red: **in-group** to out-group officer
- Others: no change in officer's in-group status

Effect of Cultural Proximity on Lending

- Group definitions (9 groups):
 - ▶ Hindus classified in 4 Government-Sanctioned Castes: General, SC, ST, OBC
 - ▶ 5 other Religions: Muslim, Christian, Sikh, Parsi, Buddhist
- Finding: Lending to in-group borrowers increases
 - ▶ More lending to existing borrowers, more new borrowers
 - ▶ Larger impact on lending to minority groups
- Favoritism or information?

Effect of Cultural Proximity on lending quality

- Default
 - ▶ In-group borrowers also default less
 - ▶ They continue to default less even after the in-group officer leaves
- Collateral
 - ▶ In-group borrowers are required less collateral per Rupee borrowed
- Consistent with proximity leading to an improvement in the quality (profitability) of lending decisions

Lessons

- Consistent with the bright side: loan officers make more, better quality loans to borrowers who belong to their same group
- Despite the bright interpretation, implies less lending to minorities
 - ▶ A minority group borrower has low probability of facing an officer from her own group
 - ▶ On average, minority borrowers receive less credit **exclusively** due to group identity
- May also lead to statistical discrimination
 - ▶ Minorities are more likely to default (because on average assigned to the "wrong" officer)
 - ▶ If one ignores the group identity of the lender, may lead to conclude that minorities are unconditionally worse risk

Implications

- Reinforces the view that productivity measures may be biased
 - ▶ Even if agents do not act strategically in response of bias (pitchers example)
- Policy prescription
 - ▶ Minority representation in positions that screen and evaluate performance of minorities
- Still unanswered
 - ▶ What explains the in-group advantage?
 - ▶ Example: information or enforcement? Language, family background, or even animus?

Thanks!



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