

Overcoming History?

(Preliminary work that (for now) draws heavily
on 'Erasing Ethnicity?')

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Questions

- Can governments shift deeply held and divisive ethnic preferences of citizens?
- Crucial policy question: Ethnically diverse countries have more conflict; higher corruption; weaker institutions; lower economic growth; etc.
- 'Nation building' that aligns preferences and increases trust & co-operation across ethnicities, or, (if possible) reduces ethnic salience & identity, may be key for econ. development
- However very few countries have explicitly engaged in this type of social engineering program.
 - Rwanda is an exception

Can we learn anything about persistence?

- There is now a large literature on long-run persistence of historical events
- Common reaction: 'history is destiny' is an unsatisfying answer
- However, it is unclear how contemporary policy interacts with these historical events
 - Is history persistent because policy *can't* overcome it?
 - Is history persistent because policy *often doesn't* overcome it?

Context: Reconciliation of Hutu and Tutsi in Rwanda

This project evaluates one dimension of a massive social engineering program in Rwanda

- 1994 ethnic genocide in Rwanda: Hutu extremists killed as many as 70% of Rwandan Tutsi
- Today: a de facto autocracy where the government controls media, forbids even mentioning ethnicity in public, let alone collecting data on it
- Several nation building campaigns to 'erase ethnicity' - centrepiece of strategy is mass-propaganda
- We focus our attention on official radio propaganda



Background of Reconciliation in Rwanda

- NYT 2017: “Laws banning so-called genocidal ideology...are used to squelch even legitimate criticism of the government. Against this backdrop, it is difficult to gauge sentiment about the effectiveness of reconciliation efforts”
- Reyntjens 2016: Reconciliation program is 2-pronged - “on the one hand, educating people and disseminating information; on the other...repressing acts and discourses opposed to unity”



Controversy Over Reconciliation in Rwanda

Focus on propaganda / re-education:

- Vansina 2005: “a whole set of false propositions and assertions” that are not commonly believed by the populace, but instead adopted as “rehearsed consensus”
- Thomson, 2011: “alienating, oppressive and sometimes humiliating”, generating “ritualised dissimulation and strategic compliance”



The 'Erasing Ethnicity' Paper

We evaluate the use of propaganda for the purpose of reconciliation / nation building:

- Data from 52 villages in Rwanda using survey and experimental methods to measure inter-ethnic trust and attitudes
- We exploit the mountainous topography to compare people from villages that receive government propaganda over Radio Rwanda to those that don't
 - similar strategy to Yanigazawa-Drott, 2014
- We find improved ethnic attitudes in radio villages.
 - Ethnicity is less salient
 - People are more willing to interact with out-group
 - People respond in survey questions that they're more trusting
 - People behave more trusting in the trust game (in private)

Data: Collecting ethnicity in Rwanda

First piece of data we need is ethnicity, a big challenge in Rwanda:

- Proxy for ethnicity using eligibility for FARG - a genocide reparations fund for **genocide survivors**. Politically:
 - Hutu victims are officially: *“victims of massacres that occurred during the genocide against the Tutsi”*
 - Tutsi are officially: *“Survivors of the genocide against the Tutsi”*
- The question was placed within a long module about income, and further nested within a section about government support
- To be eligible for FARG Rwandans need to (a) be from a genocide village and (b) be a “survivor” (i.e. Tutsi)
 - we only survey genocide villages – didn’t want people to be ineligible because of (a)
 - all respondents were aware of the fund.

Also need respondents to be able to infer ethnicity

- We *need* the experimental data to overcome the ethnicity issue
 - Only works if resp. can tell who's Tutsi/Hutu
- Genetic studies: Tutsi are Afro-Asiatic and Hutu are Bantu
 - Even if socio-political construct (RW gov't teaches this): physical differences due to assortative matching
 - Belgians classified based on nose size, eye shape, skin colour, height, etc. (Welsh, 2012)



Tutsi Cartoon



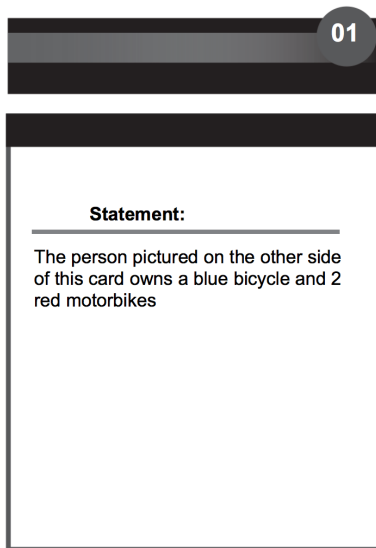
Hutu Cartoon

Outcome 1: Salience of Identity Test

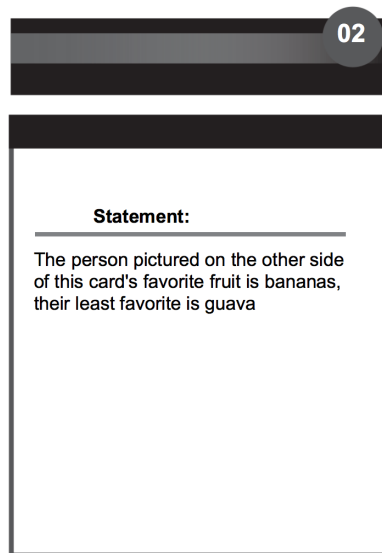
We want to measure whether people are using Hutu/Tutsi as a marker when they process information

- We use scores on a simple association / recall task
- We show pictures of Hutu/Tutsi with an associated statement
- We then read back a statement and ask respondents to remember which picture it was linked to.
- We look at how frequently people make within-ethnicity errors (i.e. mistake a Hutu for another Hutu or a Tutsi for another Tutsi)

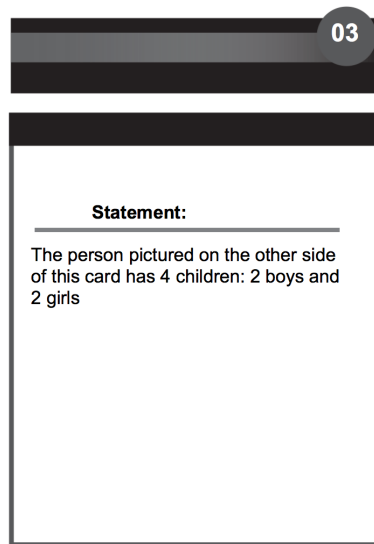
Salience of Identity Test: Example



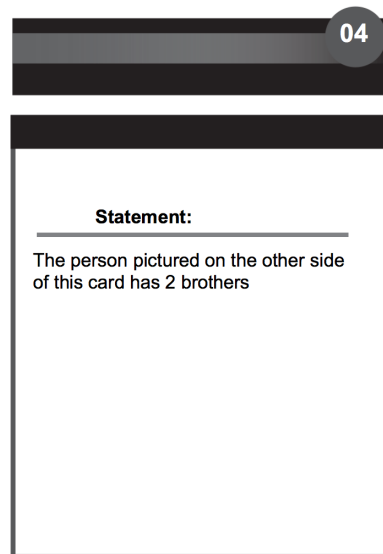
Salience of Identity Test: Example



Salience of Identity Test: Example



Salience of Identity Test: Example



Salience of Identity Test: Example



Recall Task:

- Which person has four children?
 - If I know it was one of the Tutsi, but not which one
 - Then it would suggest that I use ethnicity to categorize.
- Formally:

$$SIT = \frac{\sum \text{WithinMarkerErrors}}{\sum \text{Errors}}$$

Outcome 2: Partner selection task

We ask participants to select 5 individuals they would like to be partnered with for a co-operative task

- Individual can select the ID numbers of anyone at their lab session that is not from their village.
- Incentivized by allowing a selection of them to be partnered with one of their choices for a lab exercise (not one of the ones we are interested in here)
- We look at the share of selections from the other ethnic group:

$$\text{Partner Preference} = \frac{\sum \text{choices from other ethnic group}}{\min\{5, \text{total other ethnic group}\}}$$

Outcome 3: Trust survey question

One of our primary interests is the government ability to develop inter-ethnic trust:

- Difficult to measure: can't mention ethnicity.
- One of our attempts: ask about trust of people in their village but from the “other community”
- Big caveat: we have to leave the interpretation of *other community* up to them and do not observe how they perceive the question

Outcome 3: Trust survey question

How much do you trust the following:

People from other communities in your village?

- i. Not at all*
- ii. Just a little*
- iii. Somewhat*
- iv. A lot*

People from your own community in your village?

- i. Not at all*
- ii. Just a little*
- iii. Somewhat*
- iv. A lot*

Outcome 4: the trust game

The game is a standard way to elicit trust/tensions across communities (Fershtman and Gneezy (2001))

- How is the trust game played?
 - Two strangers from different villages play one shot game
 - Player 1 receives a days wage (600 RWF \approx \$1.50 CAD)
 - Player 1 may share a fraction of that money into a pot
 - Pot is multiplied by enumerator and collected by Player 2
 - Player 2 can choose to keep all the money in the pot or share with Player 1
- Public vs. Private information (randomized)
 - Some people play a version where offers are confidential
 - Others play a version where offers and returns are written on a poster board on the wall of the hall
 - Helps to distinguish between results driven by strategic behavior

Since SIT is new: Is it capturing what we think?

Table: Conditional correlation between % of within-ethnicity SIT errors and trust game offers, by type of game

	inter-ethnic (1)	co-ethnic (2)	inter-ethnic (3)	co-ethnic (4)	log(inter-ethnic) (5)	log(co-ethnic) (6)
Panel A - Dependent Variable: Private Trust Game Offers						
SIT	-128.1*** (28.92)	8.502 (29.51)	-133.3*** (28.98)	13.79 (28.98)	-0.478*** (0.0910)	-0.0244 (0.0747)
Equality of Coefficients (p-value)	0.0008		0.0002		0.0001	
Controls	baseline + village FE		Full + village FE		Full + village FE	
Control Group Mean of Dependent Variable	329	342	329	342	6.39	6.45
Observations	92	150	92	150	92	150
R-squared	0.327	0.249	0.454	0.335	0.432	0.341
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Empirical Strategy: Radio Rwanda

- Radio Rwanda: national radio; main source of news/infotainment/propaganda; markets itself as Radio of 'New Rwanda'.
 - Strict gov't control on radio.
 - *Reporters without Borders*: threat of suspension of radio licenses is real
 - World Press Freedom Index: Rwanda ranks 161/179
- Rwanda is "land of 1000 hills" so radio reception varies, even within small regions, depending on which side of a hill a village is on. (Yanigazawa-Drott, 2014)
- Look at variation in Radio Rwanda reception *within districts* to see if propaganda has changed inter-ethnic attitudes

Measuring Radio Signal

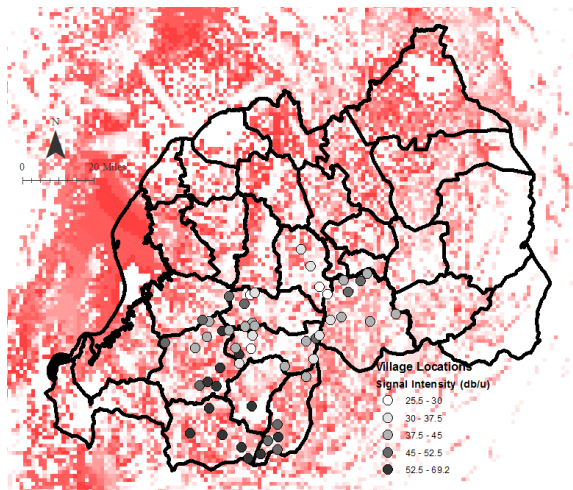
The radio signal measure is based on engineering models that calculate theoretical signal strength based on:

- Location of radio towers relative to each village; topography of Rwanda; height of tower; power of signal from tower

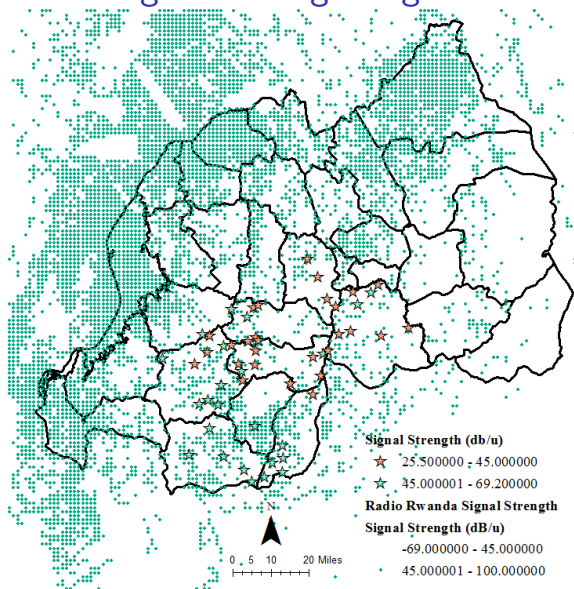
We load the data into the software and it provides us with a signal strength in db/μ

- Continuous variable may not be sensible
 - e.g. Can't hear any better/worse between 10-20 db/μ or between 70-80 db/μ
- Our main estimates use a threshold of 45 db/μ based on:
 - FCC October 2007 which states that radio reception is guaranteed in the 40-45 db/μ range
 - several other references note that 45 is appropriate

Radio Signal: Overlay Respondent Locations



Matching Radio Signal: All signals greater than 45 db/ μ



Follow-up Survey on Radio Habits

- Series of questions about radio listening habits and radio signal conducted by phone in February 2017
- In our sample of 438 we have 304 that had a phone and we were able to reach 154 of them
 - We think: liberalization of phone industry means many people changed phone numbers
 - missing are NOT fake numbers: we reached 267 when we back-checked survey answers by phone in 2013
- Big caveat: highly selected sample. Higher income than other sources, and far greater radio ownership.
 - However, compared to representative survey, Research ICT Africa, our sample listens to 4.16 hrs of radio / day compared to 4.37 hrs in their data.
- Supplement with radio ownership data from geocoded 2014 DHS.

Table: Is there a valid experiment? First Stage & Balancing

Dependent variable	(1) Mean	(2) N	(3) Radio Estimate	(4) Standard Error	(5) Public Estimate	(6) Standard Error	(7) Controls
Panel A: Constructed Radio Signal and Reported Radio Signal and Habits							
Radio Ownership (DHS data)	0.585	54,892	0.04***	(0.011)	.	.	District FE
Signal Quality of RR (follow-up data)	5.8	154	1.39***	(0.29)	-0.05	(0.16)	Baseline
Regularly Listen to RR (follow-up data)	0.43	154	0.431***	(0.125)	0.02	(0.091)	Baseline
Regularly Listen to Other Stations (follow-up data)	0.05	154	-0.181***	(0.060)	-0.035	(0.035)	Baseline
Panel B: Baseline Controls							
Gender (female = 1)	40%	438	-0.042	(0.061)	-0.039	(0.047)	distances & District FE
Age	43.3	438	-1.657	(1.841)	-1.232	(1.159)	distances & District FE
Tutsi	0.28	438	-0.120	(0.072)	-0.045	(0.035)	distances & District FE
Distance: road	0.1	438	-0.011	(0.011)	0.001	(0.003)	distances (excl. road) & District FE
Distance: Kigali	60	438	5.08**	(2.18)	-0.145	(0.533)	distances (excl. Kigali) & District FE
Distance: nearest city	28.7	438	-0.266	(1.057)	-0.027	(0.318)	distances (excl. city) & District FE
Light Density at Night	0.54	438	-0.349	(0.385)	-0.069	(0.048)	distances & District FE
RTLM	0.19	438	0.407***	(0.106)	0.055**	(0.023)	distances & District FE
Raven Score	5.39	438	0.218	(0.169)	-0.0063	(0.139)	distances & District FE
Cell phones	69.5%	438	0.023	(0.063)	-0.010	(0.013)	distances & District FE
Panel C: Additional Controls							
log(Income)	5.37	438	-0.140	(0.152)	0.075	(0.099)	distances & District FE
Genocide	0.518	438	0.11	(0.18)	-0.007	(0.024)	distances & District FE
Elevation	1,646	438	-39.99	(31.29)	1.09	(7.35)	distances & District FE
Elevation Variance	26,187	438	2.922	(6.392)	-1.151	(4.645)	distances & District FE
Primary School	63%	438	0.021	(0.066)	0.051	(0.046)	distances & District FE
High School	2.1%	438	0.025	(0.027)	0.019	(0.013)	distances & District FE
College	0.2%	438	-0.002	(0.003)	-0.003	(0.003)	distances & District FE
Facing North	0.247	438	-0.039	(0.185)	0.106***	(0.034)	distances & District FE
Facing South	0.251	438	0.045	(0.156)	-0.059*	(0.063)	distances & District FE
Facing East	0.315	438	0.233	(0.153)	-0.033	(0.030)	distances & District FE
Facing West	0.187	438	-0.239	(0.149)	-0.014	(0.023)	distances & District FE
log(sector population)	10.1	438	0.036	(0.109)	-0.001	(0.019)	distances & District FE
Sector Pop. Dens.	6.17	438	0.937	(0.572)	-0.026	(0.033)	distances & District FE
Panel D: Other Variables of Interest							
log(Land Value)	8.36	438	0.087	(0.241)	-0.11	(0.186)	distances & District FE
Other Stations	38.9%	438	0.172**	(0.075)	0.017	(0.014)	distances & District FE
Forced Labour	0.86	438	-0.437	(0.462)	-0.115	(0.157)	distances & District FE
Migration (in lifetime)	22%	438	-0.038	(0.054)	-0.022	(0.0334)	distances & District FE
Migration (years in current home)	39.2	438	-1.088	(2.506)	-1.305	(1.344)	distances & District FE
Migration (since 2004)	3.7%	438	0.057	(0.038)	0.019	(0.019)	distances & District FE

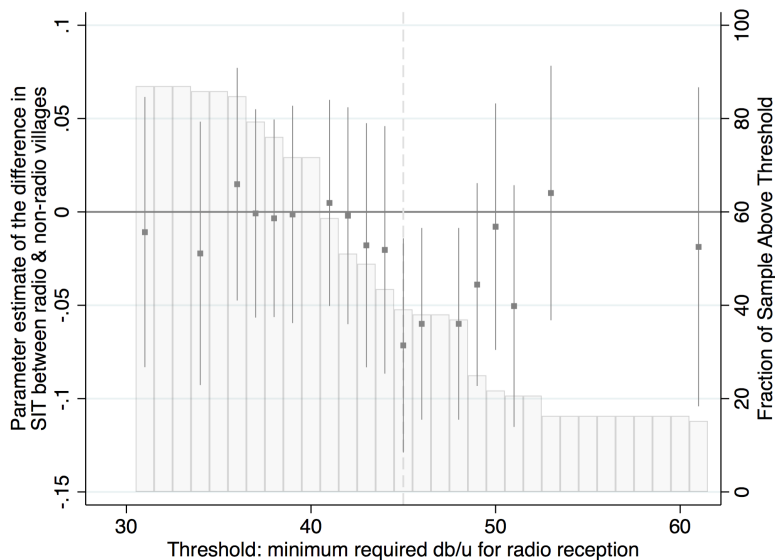
We have 54 total balancing estimates and 6 are significant at the 10% level or lower, roughly in line with what we would expect by chance.

Main Specification

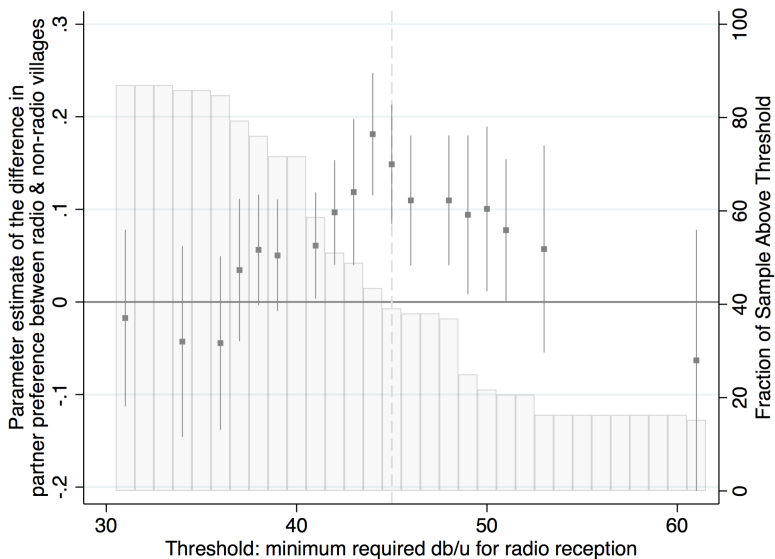
$$\phi_{ivd} = \alpha_d + \beta_1 \text{RadioRwanda}_{vd} + \mathbf{\Gamma}'\mathbf{X}_{ivd} + \epsilon_{ivd} \quad (1)$$

- i is an individual; v is a colline (village); d is a district
- α_d are village fixed-effects
- RadioRwanda_{vd} is a binary variable equal to 1 if the village gets a signal above our 45db/ μ threshold
 - But I'll show you figures plotting estimates from a range of different thresholds
- ϕ_{ivd} is one of our 4 outcomes

SIT Score Estimate by Radio Signal Threshold



Group Preference Estimate by Radio Signal Threshold



Trust Survey Estimate by Radio Signal Threshold

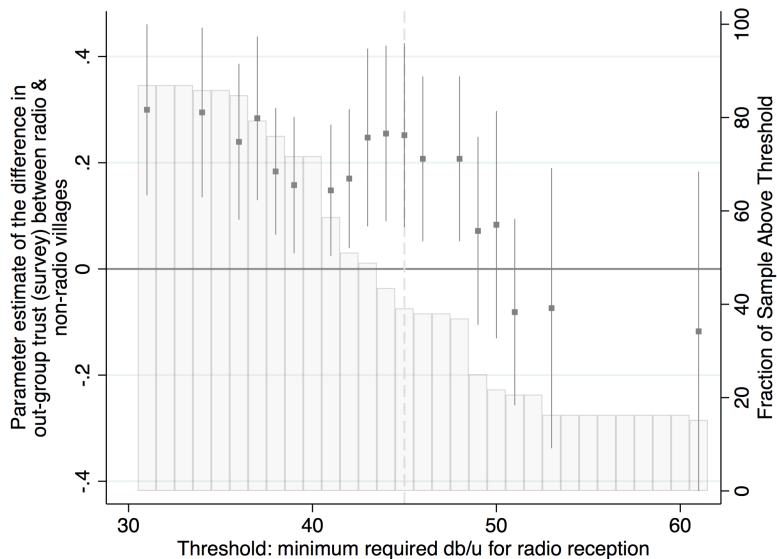


Table: Effect of living in a village that receives a Radio Rwanda signal on answers to survey questions about in-group and out-group trust

Dependent Variable:	(1) Out-group trust	(2) In-group trust	(3) Out-group trust	(4) In-group trust
Radio Rwanda Reception	0.215** (0.0899)	0.0241 (0.148)	0.279*** (0.0869)	0.0500 (0.158)
Equality of Coefficients (p-value)	0.1061		0.0467	
Controls	baseline		full	
Control Group Mean of Dependent Variable	2.91	3.17	2.91	3.17
Observations	438	438	438	438
R-squared	0.161	0.184	0.133	0.151

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Private Trust Game Estimate by Radio Signal Threshold

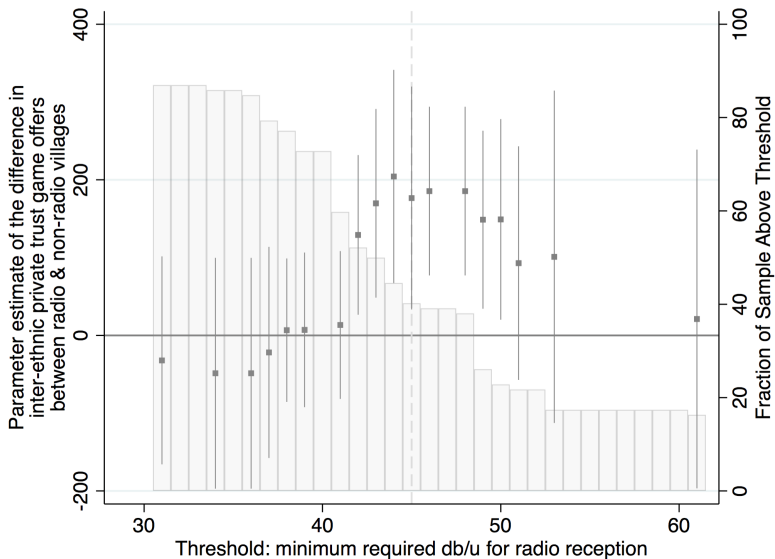


Table: Effect of living in a village that receives a Radio Rwanda signal on trust game offers, by type of game

Partnership Type:	inter-ethnic (1)	co-ethnic (2)	inter-ethnic (3)	co-ethnic (4)	log(inter-ethnic) (5)	log(co-ethnic) (6)
Panel A: Private Trust Game Offers						
Radio Rwanda Reception	117.0** (48.86)	31.16 (28.78)	157.3*** (34.30)	-23.06 (36.29)	0.421*** (0.134)	0.0114 (0.104)
Equality of Coefficients (p-value)	0.093		0.0002		0.009	
Controls	baseline		full		full	
Control Group Mean of Dependent Variable	330	342	330	342	6.39	6.45
Observations	92	150	92	150	92	150
R-squared	0.521	0.426	0.705	0.513	0.519	0.541

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Public Information

- We look at trust games outcomes in the public/private treatment.
- Is behavioural change driven by “ritualised dissimulation and strategic compliance”?
 - SIT is likely an attitude shift, but the other three outcomes could be either
 - We examine differences between the public and private Trust Game

Sensitivity of inter-ethnic offers to public information by signal strength

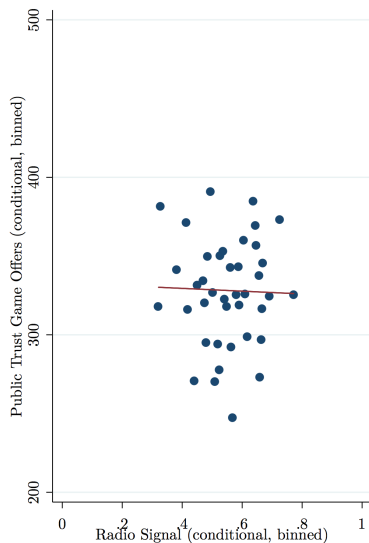
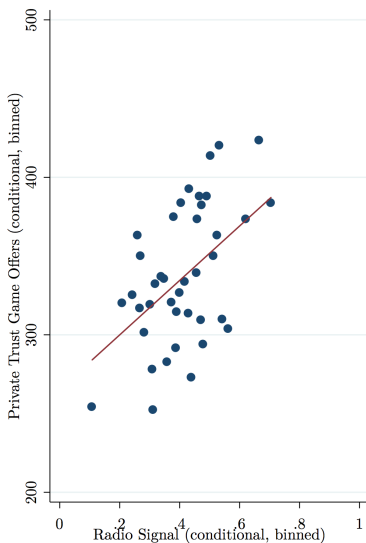


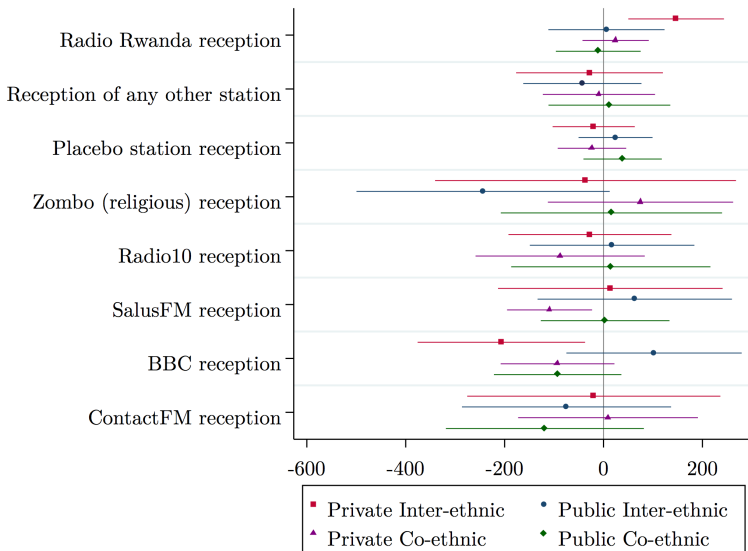
Table: Effect of having decisions in the trust game made public on trust game offers, by type of game and Radio Rwanda reception

Dependent Variable: Partner type: Sample: RR Reception	Trust Game Offers							
	Inter-ethnic				Co-ethnic			
	yes (1)	no (2)	yes (3)	no (4)	yes (5)	no (6)	yes (7)	no (8)
Public	-1.215 (15.09)	40.81* (23.87)	-6.214 (13.71)	51.65** (25.98)	-15.25 (19.72)	19.40 (23.42)	-18.91 (21.96)	0.378 (23.20)
Equality of Coefficients (p-value)	0.137		0.048		0.258		0.546	
Controls	baseline		full		baseline		full	
Control Group Mean of Dependent Variable	329	335	329	335	312	348	312	348
Observations	76	87	76	87	127	148	127	148
R-squared	0.717	0.628	0.802	0.751	0.398	0.383	0.428	0.521

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

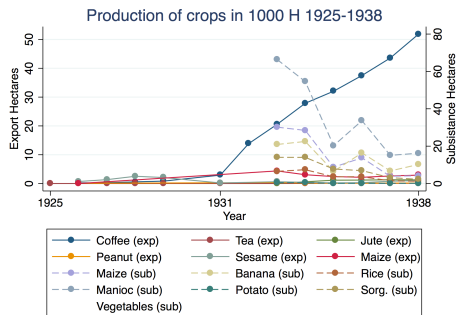
Trust Game Estimate Relative to Other Stations



How Does Nation-Building Propaganda Interact with Colonial History?

Consider Forced Labour in Rwanda (Blouin, 2016). Belgium began colonizing Rwanda and Burundi after WWI:

- Coffee was pushed to increase exports & taxes
- 1931: quotas introduced
 - Chiefs earned the profits from trees which was taxed by Belgians
- Large variation in coffee suitability, so quotas were binding for many

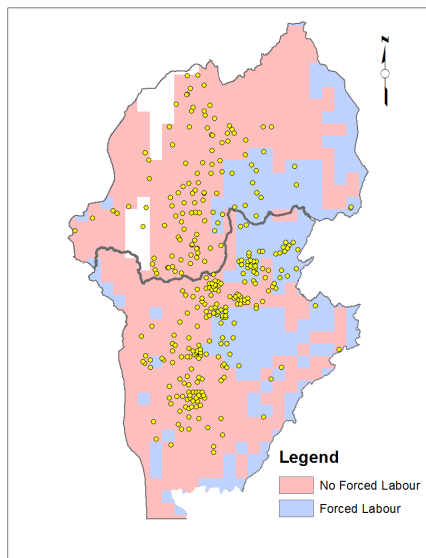


The Introduction of Colonial Forced Labour

Belgium introduced forced labour as 'compensation' to chiefs in regions where the quotas were costly:

- *Forced labour was only to be used to meet the quotas*
 - 'Banned' in regions where coffee was a primary crop
 - Most used in regions where quotas were most costly (i.e. coffee was least profitable)
- Exogenous forced labour variation: Where were quotas binding? (i.e. where was/wasn't coffee a 'primary crop' even without quotas?)
 - We collect data on crop suitability and colonial era prices to map out (using exogenous criteria) the likely forced labour and no-forced labour villages.

Assignment of forced labour and colonial era family villages



Forced Labour did Have a Persistent Effect On Ethnic Attitudes in Rwanda

Dependent Variable	SIT (1)	Partner Preference (2)	Trust Survey (3)	Trust Game (4)
Forced Labour	0.00166* (0.000926)	-0.00517*** (0.000856)	-0.00397 (0.00304)	-96.34*** (24.99)
Controls	baseline	baseline	baseline	baseline
Observations	438	438	438	92
R-squared	0.140	0.393	0.152	0.408

Heterogeneity by Forced Labour Status

Dependent Variable:	<u>SIT</u>		<u>Partner Preference</u>		<u>Out-Group Trust (survey)</u>		<u>Inter-Ethnic Trust Game Offer</u>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>Corvée</u>	<u>No Corvée</u>	<u>Corvée</u>	<u>No Corvée</u>	<u>Corvée</u>	<u>No Corvée</u>	<u>Corvée</u>	<u>No Corvée</u>
Radio Rwanda Signal	-0.147** (0.0718)	-0.105 (0.0938)	0.172*** (0.0362)	-0.0103 (0.0796)	0.367** (0.162)	-0.0549 (0.180)	136.9 (83.70)	. .
Controls	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
Observations	301	137	301	137	301	137	60	32
R^2	0.178	0.270	0.415	0.542	0.148	0.355	0.533	0.935
Control Group Mean of Dependent Variable	0.912	0.909	0.412	0.463	2.92	2.91	294	382

Conclusions

- Evidence to suggest that even in the short/medium run and under challenging conditions, nation building can work to 'bring groups together'
- Attitudes may be most malleable in regions with ethnic divisions shaped by history
- Evidence to suggest that ethnic salience & identity is (at least in part) a political construct.