Seeing is Believing: The Effect of Television on the Identity and Lives of Hispanic People

Andrew Kao
University of Chicago

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Motivation

- Large literature on how TV affects behavior (Yanigazawa-Drott 2014; DellaVigna & al. 2007; Ferrara & al., 2012)
- 50% of Hispanics watch satellite or broadcast Spanish Language TV
- Complicated time for largest ethnic minority in the US
- Prior efforts to study Hispanic interaction with media focused on politics (Waldfogel & al. 2009; Trujillo & al. 2012)

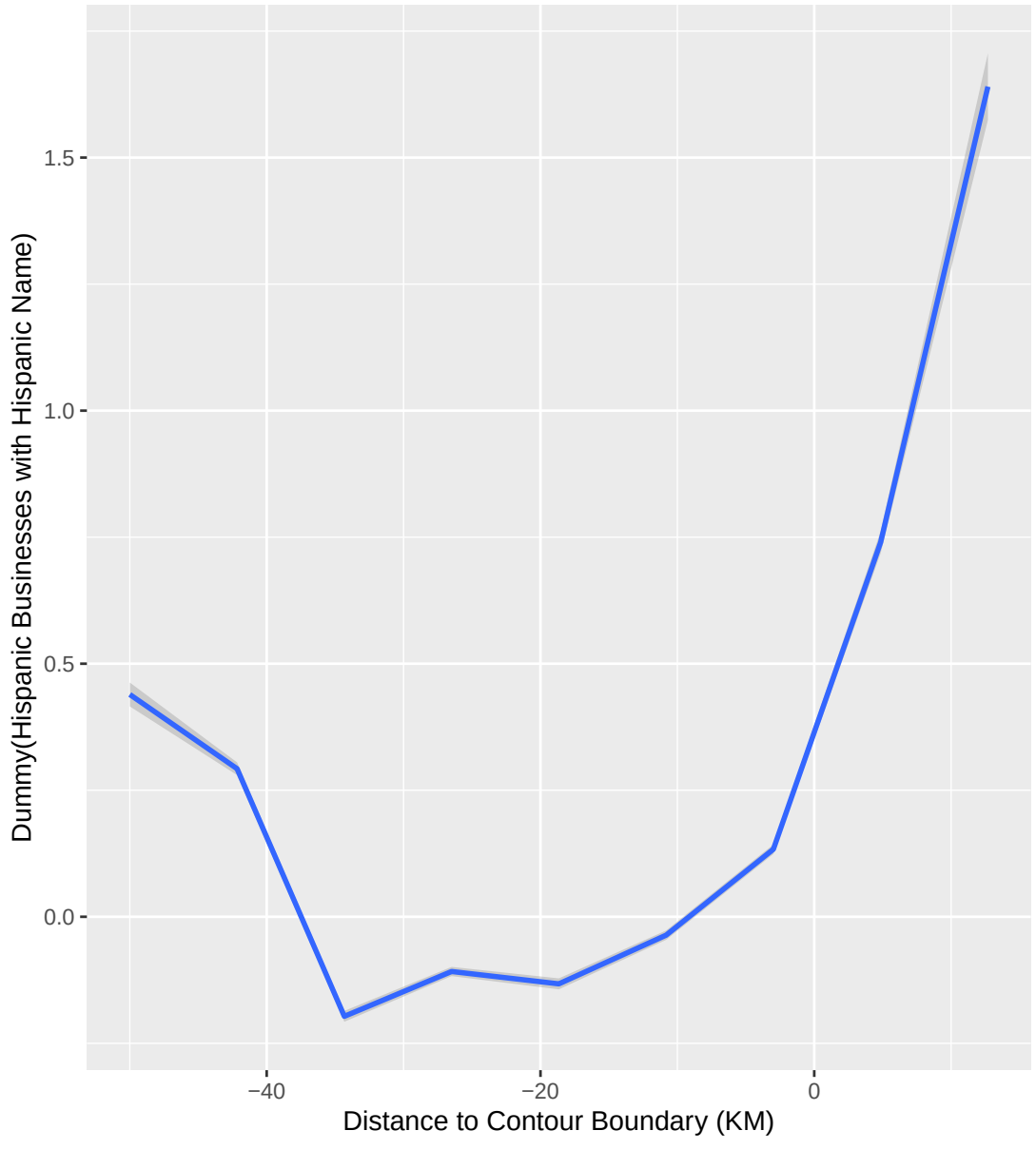
This paper:

(1) How does Hispanic behavior change in firms and schools?

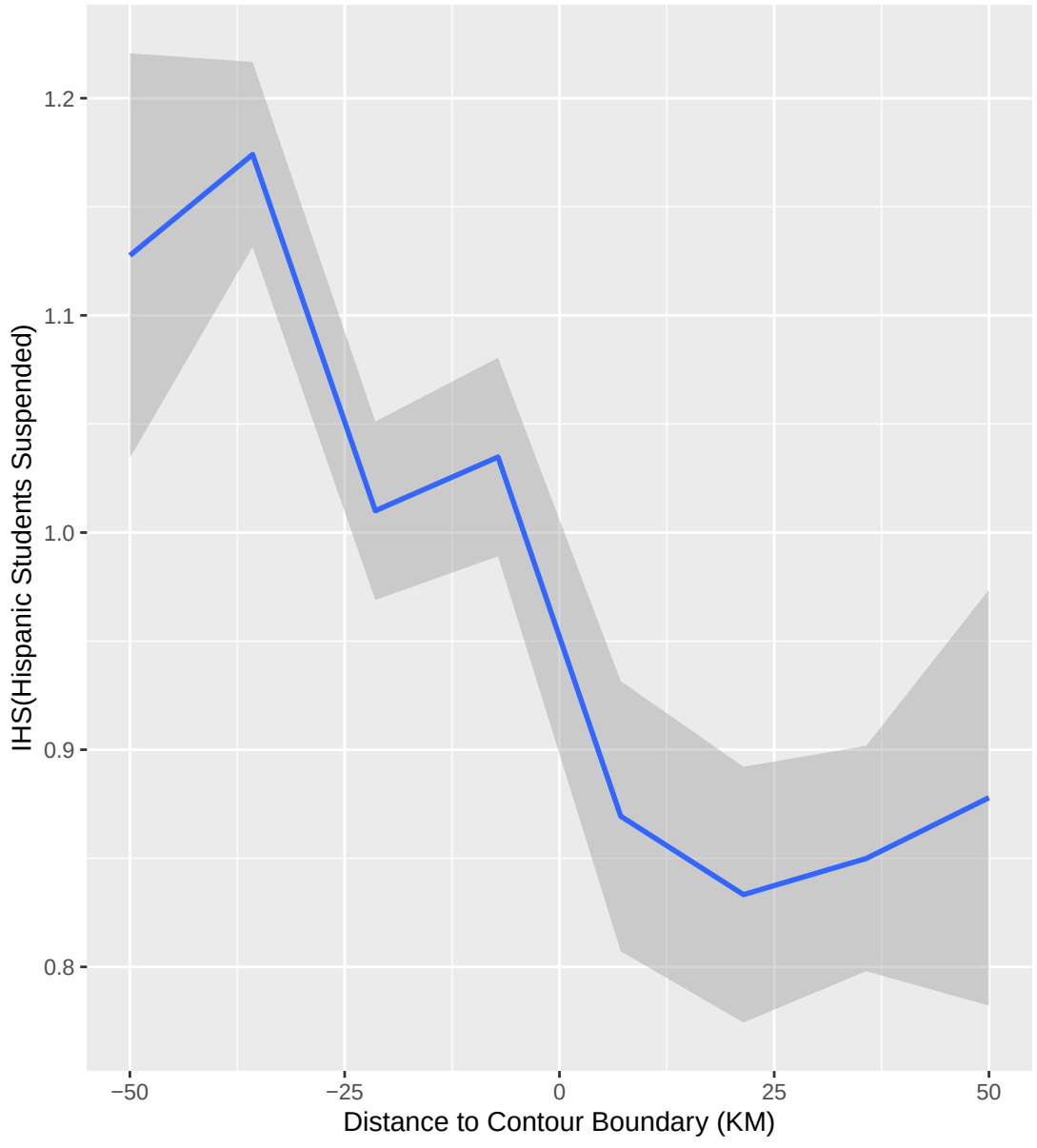
(2) How is identity affected?

- Identification: follow Velez & Newman (2019) and construct spatial RD arising from FCC TV signal regulation

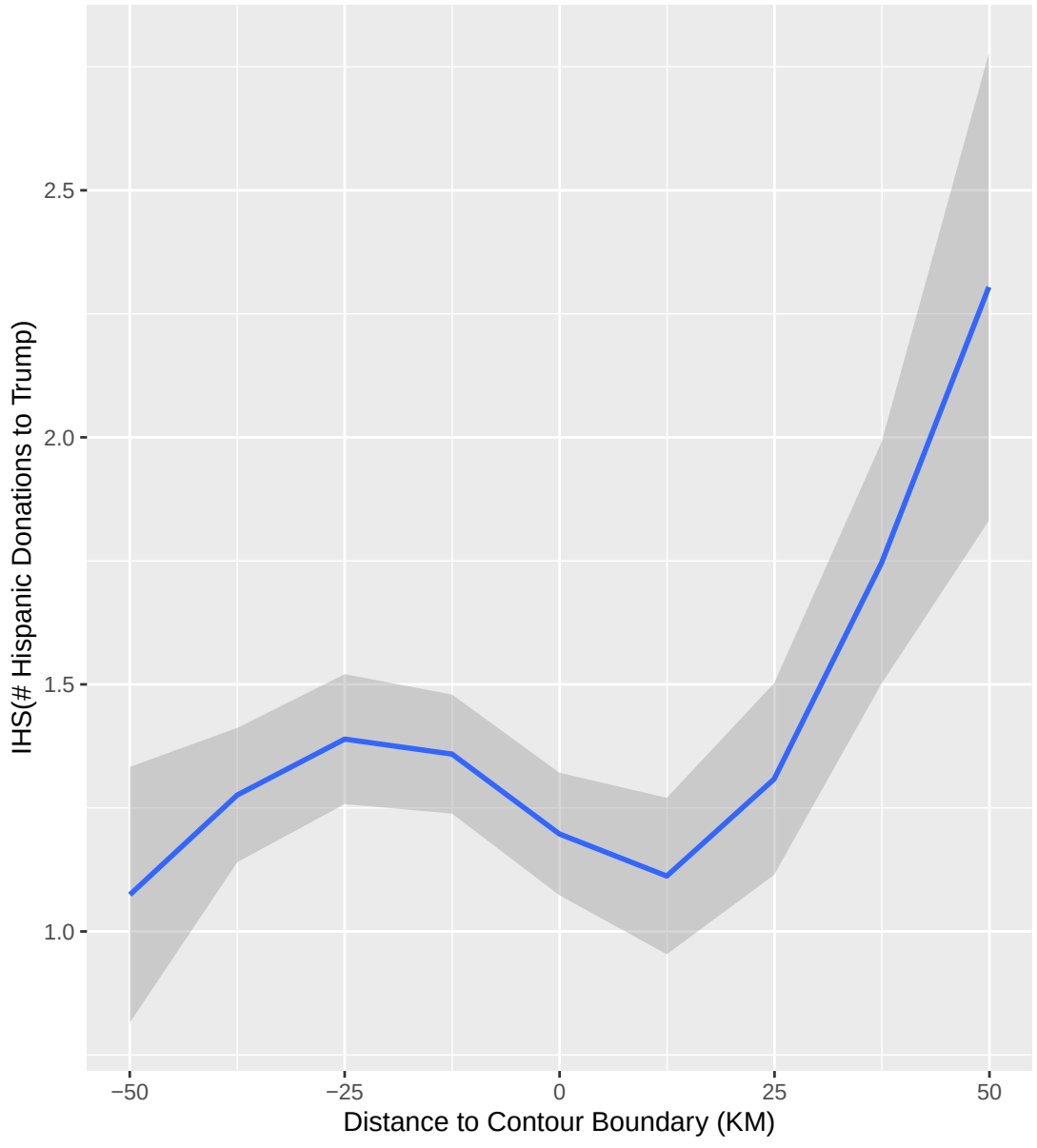
Main Findings - Firms



Main Findings - Schools



Main Findings - Campaign Contributions



Contribution

- Existing work on Hispanic communities often geographically constrained & media studies only concerned with effect on politics (Velez & Newman (2019); Trujillo & al. 2012).

→ Identify causal effect on larger scale and with more granularity (geocoded microdata)

→ Provide a first look at how media affects business and schooling outcomes for Hispanics

- New research on how identity is constructed and strengthened (Atkin & al. 2019; Bazzi & al. 2019)

→ Supply a revealed preference link to how identity can be bolstered by TV

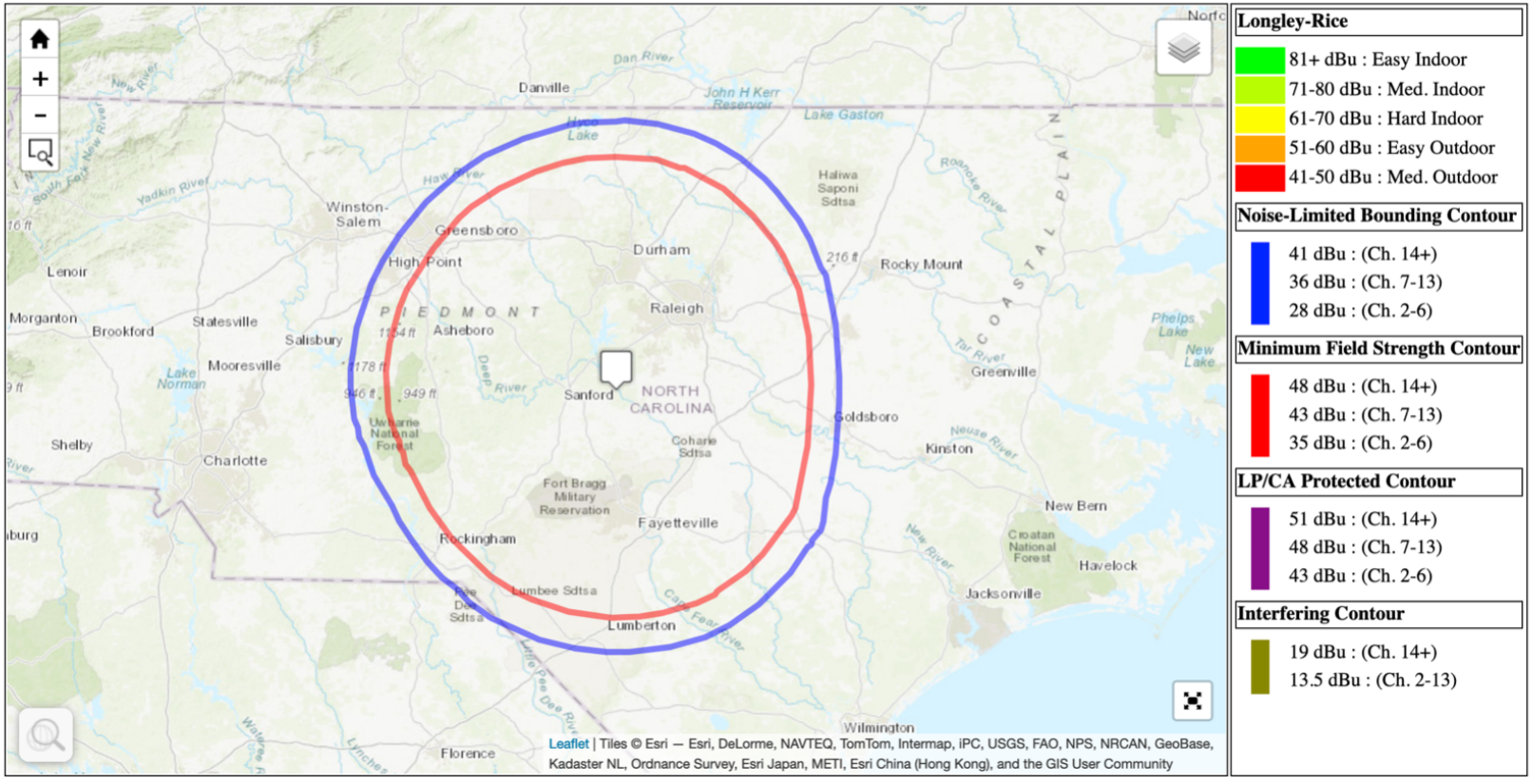
Empirical Strategy

- OET Bulletin No. 69 — protect TV stations in (50,90) coverage contour areas
  - Mechanical formula based on geographic/technical factors (not political/economic)
  - Fairly large boundaries that typically cut through small towns/suburbs
  - Purchase/constructed antennas prior to 1977
- Spanish Language TV: Isolate effect on Hispanic communities
- Both RD and instrument with distance
  - Keep observations within 100 KM of boundary for comparability
  - Focus on the RD, dummy for whether observation falls inside contour

Coverage Map for TV Station WUVC-DT

Coverage Maps

WUVC-DT (40-1) BLCDT-20060912ACZ



Longley-Rice

- 81+ dBu : Easy Indoor
- 71-80 dBu : Med. Indoor
- 61-70 dBu : Hard Indoor
- 51-60 dBu : Easy Outdoor
- 41-50 dBu : Med. Outdoor

Noise-Limited Bounding Contour

- 41 dBu : (Ch. 14+)
- 36 dBu : (Ch. 7-13)
- 28 dBu : (Ch. 2-6)

Minimum Field Strength Contour

- 48 dBu : (Ch. 14+)
- 43 dBu : (Ch. 7-13)
- 35 dBu : (Ch. 2-6)

LP/CA Protected Contour

- 51 dBu : (Ch. 14+)
- 48 dBu : (Ch. 7-13)
- 43 dBu : (Ch. 2-6)

Interfering Contour

- 19 dBu : (Ch. 14+)
- 13.5 dBu : (Ch. 2-13)

Specifications

Main Model:

$$Y_i = \beta_0 + \beta \mathbb{I}[InsideContour_i] \times Distance_i + \gamma X_i + \epsilon_i \quad \epsilon \overset{iid}{\sim} N(0, \sigma_i^2)$$

Spatial Autogressive:

$$Y = \beta_0 + \rho WY + \beta \mathbb{I}[InsideContour] \times Distance + \gamma X + \epsilon$$

Spatial Error:

$$Y = \beta_0 + \beta \mathbb{I}[InsideContour] \times Distance + \gamma X + \epsilon$$

$$\epsilon = \lambda W \epsilon + \nu$$

where W is a 4 nearest neighbor/rook spatial weights matrix

Data - General

- Instrument:
  - Identify 100 Spanish Language TV stations across the US from TMS
  - Station contours and other station data from the FCC (use data from 2015 for consistency with outcomes)
- Geocoding:
  - ArcGIS: 99%+ successfully geocoded, but data limit (schools and small number of campaign contributions)
  - US Census Geocoder: 80% successfully geocoded (firms and campaign contributions)
- Demographic and migration information at county level from ACS

Selection? Migration?

	IHS(# Hispanic Migrants)		
Panel A: Origin County Inside Contour	(1)	(2)	(3)
Dummy: Destination Outside TV Contour	-0.387^{***}	-0.286^{***}	-0.280^{***}
	(0.048)	(0.044)	(0.044)
TV Dummy $\times$ Distance to Origin	-0.003^{**}	-0.004^{***}	-0.004^{***}
	(0.001)	(0.001)	(0.001)
TV Dummy $\times$ Distance to Destination	0.001	-0.002^{*}	-0.002
	(0.001)	(0.001)	(0.001)
Distance from Contour to Origin (KM)	0.001	0.003^{*}	0.003
	(0.002)	(0.002)	(0.002)
Distance from Contour to Destination (KM)	-0.001	0.002	0.002
	(0.001)	(0.001)	(0.001)
Observations	8,479	8,479	8,479
Panel B: Origin County Outside Contour			
Dummy: Destination Inside TV Contour	-0.078	-0.123	-0.120
	(0.108)	(0.096)	(0.096)
TV Dummy $\times$ Distance to Origin	-0.003^{*}	-0.004^{***}	-0.004^{***}
	(0.002)	(0.001)	(0.001)
TV Dummy $\times$ Distance to Destination	-0.004^{***}	-0.002	-0.002
	(0.001)	(0.001)	(0.001)
Distance from Contour to Origin (KM)	-0.0003	0.001	0.001
	(0.001)	(0.001)	(0.001)
Distance from Contour to Destination (KM)	-0.001^{***}	-0.001^{***}	-0.001^{***}
	(0.0002)	(0.0003)	(0.0003)
Observations	4,062	4,062	4,062
Log(Population)	Yes	Yes	Yes
County % Hispanic	No	Yes	Yes
Log(Income)	No	No	Yes

Notes: County-county data with origin F.E.

Firms

- Data from Florida's Division of Corporations
  - Why Florida? 23% Hispanic (8% US total), 11 SLTV stations (11% total) and open data
  - 146,032 firms successfully geocoded
  - Aggregate data into 2×2 KM^2 squares
- Firm Owner Name Classification
  - 'ethnicolr' — a LSTM model trained with TensorFlow on Florida voter registration data
  - Validation $>$ 85% accurate, 23.5% firm owners are Hispanic
- Firm Name Classification
  - Keyword matching on (1) references to Latin American countries, (2) top 50 most common Spanish words not in English, and optionally (3) references to common Hispanic foods
  - 1% (1.1% with food) of firms match this criteria