

Fear and Favoritism in the Time of Covid-19

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Baran Han, KDI School of Public Policy Management

Ben Ho, Vassar College

Inbok Rhee, KDI School of Public Policy Management

Chrysostomos Tabakis, KDI School of Public Policy Management

Fear is the path to the dark side...



“Fear is the path to the dark side. Fear leads to anger. Anger leads to hate. Hate leads to suffering.”

Yoda, Phantom Menace

Fear is the path to the dark side...



“Fear is the path to the dark side. Fear leads to anger. Anger leads to hate. Hate leads to suffering.”

But fear of the “Other” can bring us together

Motivation: Covid-19 and in-group favoritism/out-group antagonism

- “China Virus” by conservative media (both in the US and in South Korea)
- 91% of Media Stories in the US are negative in tone even when things are getting better (Sacerdote et al 2020)
- But...
- 39% Americans reported more racist comments toward Asians (Pew June 2020), 21% of Black Americans reported experiencing racist comments as well.

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Overview of Paper

Reported fear correlated w/ out-group antagonism but
Induced fear causes out-group altruism

Experimental Design

- Treatment: Write an autobiographical emotional memory task (AEMT) paragraph about fear
- Outcome: Donate to in-group (Korean red cross) vs out-group (foreign-worker) charity
- Mechanisms: Social Prefs and Media

Subject Pool

- 6,472 Nationally Representative Sample of South Koreans

Main Findings

- Reported Fear and out-group antagonism indeed **positively** correlated.
- Induced fear and out-group antagonism **negatively** correlated

Mechanisms

- Reported fear:
 - Media viewership
 - Political Views
- Induced fear:
 - Altruism
 - Not pos/neg reciprocity, or trust

Three Channels

Fear increases or decreases favoritism, also Selection

Fear Increases Favoritism “Circle the Wagons”

- Conflict increases in-group fairness in games (Whitt and Wilson AJPS 2007, Leuvelde & Woords 2016 etc)
- Terror Management Theory reminders of mortality – increase trump support. (Cohen, Solomon, Kaplin (2017) Cohen, Miller, Pr, Ogilvie (2004))

- VS -

Fear Reduces Favoritism: “Common Enemy” or “Other”

- Conflict causes cooperation generally (but to-ingroup only?) (Bauer et al., JEP 2016)
- Well studied in games (Jaegher, 2020)

But Selection!!!

Fearful People also Favoritistic

- Conservatives are more sensitive to noise / threatening images (Science Oxley et al 2008; Ahn, Montague et al. 2014)
- Conservatives’ amygdalas more responsive to fear (Kanai et al 2011)
- Also death anxiety, ambiguity aversion, uncertainty tolerance (Jost et al. 2003; Vigil 2010;)
- Conservatives more in-group focused (Haidt et al. 2009, Enke JPE 2020)

Design

(pre-registered at AEA RCT Registry. October 08. <https://doi.org/10.1257/rct.6571-1.0>)

- Background Questions
 - Gallup/GPS measures of risk, patience.
- **AEMT Treatment 2x3**
- Outcome
 - Donation to a charity (Korean Red Cross vs Foreign Workers)
 - Multi-ethnic Fundraiser
 - Policy opinions
- Mechanisms
 - Media, trust, altruism, pos/neg reciprocity

AEMT Treatment: 2x3

- Fear vs Happiness
 - Write a paragraph about something that made you afraid/happy
- News report that X was seen breaking quarantine where X =
 - Unspecified [Korean]
 - Korean-Chinese
 - Chinese

Treatment Text (2x3)

AEMT (Fear vs Happy) and Media News Story

Fear vs Happy Treatment

- *We are interested in understanding how and when people feel fear or anxiety in their everyday lives. Such feelings may be due to various reasons such as [losing your job, the uncertainty of the future, or yourself or your family getting sick]. If you have experienced such feelings of fear or anxiety in the past few months, please briefly describe them below:*

Media Treatment

- *The Centers for Disease Control and Prevention clearly stated that not only the confirmed person, but also those suspected of contact with the confirmed person should be quarantined (self, facility, hospital) for 14 days from the last contact. However, for example, one [Korean, Korean Chinese, Chinese] violated self-containment guidelines and deviated. Have you heard of this?*

Empirical Specification

3 Specifications

1. Treatment on Outcome (eq 1)
2. Reported Fear on Outcome (eq 2)
3. IV of Fear on Outcome (IV of eq 1)

$$y_i = \beta \cdot Treatment_i + \vec{\gamma} \cdot \vec{X}_i + \varepsilon_i \quad (1)$$

$$y_i = \beta \cdot Fear_i + \vec{\gamma} \cdot \vec{X}_i + \varepsilon_i \quad (2)$$

Outcome

- In-group Donation
- Out-group Donation
- Fundraising Clickthrough

Also interactions with...

- Media Consumption
- Political ideology
- Economic parameters (Falk et al Global Preferences Survey, QJE 2018)

Hypotheses

Dep Var: In-group Favoritism = Donation to Foreign Workers
(also whether fundraiser page accessed and policy preferences)

Main Effects

- H1a Fear (vs Happiness) -
> In-group Favoritism
- H1b News story -> In-group Favoritism

Interaction Effect

- H1c Fear makes the effect of news story bigger

Mediation Effects

- Effect of H1a, H1b, H1c, is explained by changes in...
 - Trust, altruism, reciprocity, risk, patience, beliefs

Heterogeneity

- Effects of H1a, H1b, H1c are bigger for...
 - Media sources
 - Media trust

Summary Statistics

Variable	N	Mean	Std. Dev.
Keep to Self	6472	6.309	4.2
Ingroup Donation	6472	2.227	3.38
Outgroup Donation	6472	1.427	2.832
Total Donation	6472	3.654	4.188
Clicked	5849	0.487	0.5

	Fear Treatment			Happiness Treatment			Diff
	N	Mean	Std.Dev.	N	Mean	Std.Dev.	
Panel A : Demographic Characteristics							
Age	3239	46.97	15.01	3233	46.62	14.99	0.354
Sex	3239	0.51	0.50	3233	0.50	0.50	0.002
Panel B : Education							
Up to middle school	63	1.95		58	1.79		4.75
High school(Graduated)	1622	50.08		1591	49.21		(0.45)
College(Enrolled)	217	6.70		193	5.97		
College(Graduated)	1105	34.12		1127	34.86		
Graduate school(Enrolled)	24	0.74		33	1.02		
Graduate school(Graduated)	208	6.42		231	7.15		
Panel C : Religion							
Christianity	657	20.28		642	19.86		3.79
Buddhism	538	16.61		554	17.14		(0.44)
Catholicism	358	11.05		390	12.06		
No Religion	1652	51.00		1603	49.58		
Etc.	34	1.05		44	1.36		
Panel D : Political View							
Ideology	3111	3.00	0.92	3088	2.99	0.90	0.015
Ruling Party Support	3239	0.50	0.50	3233	0.49	0.50	0.004
Panel E : GPS Preferences							
GPS Patience	3239	-0.00	0.90	3233	0.00	0.90	-0.009
GPS Risk Taking	3239	-0.00	0.89	3233	0.00	0.87	-0.004

First Stage

The Fear treatment does increase fear.

(4 pt Likert scale)

(and also sadness and surprise, consistent with Mills and D'Mello PlosOne 2014)

Statistic	N	Mean	St. Dev.
Fear	6,472	2.326	0.913
Anger	6,472	2.232	0.986
Happiness	6,472	2.756	0.853
Sad	6,472	2.093	0.930
Disgust	6,472	1.760	0.898
Surprise	6,472	1.737	0.845

	(1) Fear	(2) Anger	(3) Happiness	(4) Sadness	(5) Hate	(6) Surprise
Fear Treatment	0.108*** (0.023)	0.014 (0.025)	-0.016 (0.021)	0.042* (0.023)	0.015 (0.022)	0.036* (0.021)
Observations	6,472	6,472	6,472	6,472	6,472	6,472
R^2	0.004	0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

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

Table 4: Manipulation Check

Main Results

1) Fear Treatment Increases outgroup donation by 9%

Panel B: Outgroup Donation

Fear Treatment	0.144** (0.070)	0.122* (0.069)	0.139** (0.068)	0.138* (0.070)	0.134* (0.070)
R^2	0.001	0.042	0.068	0.073	0.075
Reported Fear	-0.117*** (0.039)	-0.079** (0.038)	-0.074** (0.038)	-0.079** (0.039)	-0.080** (0.039)
R^2	0.001	0.042	0.068	0.073	0.075
IV Estimate	1.332* (0.716)	1.113* (0.674)	1.242* (0.664)	1.208* (0.667)	1.211* (0.687)
Obs.	6,472	6,472	6,472	6,199	6,199
GPS pref. Control	N	Y	Y	Y	Y
Demo. Control	N	N	Y	Y	Y
Poli. Control	N	N	N	Y	Y
Media Control	N	N	N	N	Y

Main Results

2) Reported Fear (4 pt Likert) assoc w/ 6-9% Less donations

Panel B: Outgroup Donation

Fear Treatment	0.144** (0.070)	0.122* (0.069)	0.139** (0.068)	0.138* (0.070)	0.134* (0.070)
R^2	0.001	0.042	0.068	0.073	0.075
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Obs.	6,472	6,472	6,472	6,199	6,199
GPS pref. Control	N	Y	Y	Y	Y
Demo. Control	N	N	Y	Y	Y
Poli. Control	N	N	N	Y	Y
Media Control	N	N	N	N	Y

Main Results

2b) adding GPS controls accounts for ¼ of effect

Panel B: Outgroup Donation

Fear Treatment	0.144** (0.070)	0.122* (0.069)	0.139** (0.068)	0.138* (0.070)	0.134* (0.070)
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Reported Fear	-0.117*** (0.039)	-0.079** (0.038)	-0.074** (0.038)	-0.079** (0.039)	-0.080** (0.039)
R^2	0.001	0.042	0.068	0.073	0.075
IV Estimate	1.332* (0.716)	1.113* (0.674)	1.242* (0.664)	1.208* (0.667)	1.211* (0.687)
Obs.	6,472	6,472	6,472	6,199	6,199
GPS pref. Control	N	Y	Y	Y	Y
Demo. Control	N	N	Y	Y	Y
Poli. Control	N	N	N	Y	Y
Media Control	N	N	N	N	Y

Main Results

3) IV estimate: 1 point (4 pt Likert) fear-> 80-90% more donations

Panel B: Outgroup Donation

Fear Treatment	0.144** (0.070)	0.122* (0.069)	0.139** (0.068)	0.138* (0.070)	0.134* (0.070)
R^2	0.001	0.042	0.068	0.073	0.075
Reported Fear	-0.117*** (0.039)	-0.079** (0.038)	-0.074** (0.038)	-0.079** (0.039)	-0.080** (0.039)
R^2	0.001	0.042	0.068	0.073	0.075
IV Estimate	1.332* (0.716)	1.113* (0.674)	1.242* (0.664)	1.208* (0.667)	1.211* (0.687)
Obs.	6,472	6,472	6,472	6,199	6,199
GPS pref. Control	N	Y	Y	Y	Y
Demo. Control	N	N	Y	Y	Y
Poli. Control	N	N	N	Y	Y
Media Control	N	N	N	N	Y

Alternate Outcome Variable

similar pattern for multi-ethnic fundraiser click-thru

Outcome Var : Seek Fundraiser Information

Fear Treatment	0.051*** (0.015)	0.044*** (0.015)	0.046*** (0.015)	0.047*** (0.015)	0.047*** (0.015)
R^2	0.003	0.046	0.055	0.059	0.064
Reported Fear	-0.013 (0.008)	-0.006 (0.008)	-0.003 (0.008)	-0.002 (0.009)	-0.004 (0.009)
R^2	0.001	0.044	0.053	0.057	0.062
IV Estimate	0.553** (0.243)	0.470** (0.217)	0.486** (0.217)	0.475** (0.209)	0.491** (0.217)
Obs.	4,188	4,188	4,188	4,003	4,003
GPS pref. Control	N	Y	Y	Y	Y
Demo. Control	N	N	Y	Y	Y
Poli. Control	N	N	N	Y	Y
Media Control	N	N	N	N	Y

Alternate Outcome Variable (GSS):

“Do you want the following groups to decrease in Korea?”

VARIABLES	(1) North Korea Defectors	(2) North Korea Defectors	(3) Foreign Production Workers	(4) Foreign Production Workers	(5) Foreign Professional Workers	(6) Foreign Professional Workers	(7) The Ethnic Koreans From China	(8) The Ethnic Koreans From China	(9) Foreign Students	(10) Foreign Students	(11) Foreign Businessmen and Investors	(12) Foreign Businessmen and Investors
Fear Treatment	-0.022 (0.029)	-0.014 (0.029)	-0.019 (0.026)	-0.019 (0.026)	-0.060** (0.027)	-0.060** (0.027)	-0.096*** (0.026)	-0.088*** (0.025)	0.010 (0.026)	0.004 (0.026)	0.009 (0.027)	0.011 (0.026)
R ²	0.000	0.080	0.000	0.044	0.001	0.051	0.002	0.122	0.000	0.077	0.000	0.088
Reported Fear	0.113*** (0.016)	0.076*** (0.016)	0.078*** (0.014)	0.057*** (0.015)	0.063*** (0.015)	0.036** (0.015)	0.084*** (0.014)	0.054*** (0.014)	0.104*** (0.014)	0.079*** (0.014)	0.074*** (0.015)	0.043*** (0.015)
R ²	0.008	0.084	0.005	0.046	0.003	0.051	0.005	0.123	0.008	0.082	0.004	0.089
IV Fear	-0.190 (0.260)	-0.120 (0.251)	-0.166 (0.232)	-0.168 (0.234)	-0.543** (0.271)	-0.547** (0.270)	-0.841*** (0.298)	-0.788*** (0.286)	0.096 (0.241)	0.032 (0.239)	0.084 (0.240)	0.099 (0.239)
Obs.	5,796	5,609	6,117	5,901	6,137	5,919	6,158	5,920	6,159	5,936	6,210	5,986
Control	No	Full	No	Full	No	Full	No	Full	No	Full	No	Full

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Similar Patterns for
 “*Korean-Chinese*” and
 “*Foreign Professional
 Workers*”

Once again:

- Less antagonism for fear treatment
- Otherwise, reported fear correlated with outgroup antagonism for all groups

Another Alternate Outcome (WVS): “Groups you would not like to have as neighbors”

VARIABLES	(1) Persons With Disabilities	(2) Persons With Disabilities	(3) Foreign Immigrants/ Workers	(4) Foreign Immigrants/ Workers	(5) Members Of A Cult	(6) Members Of A Cult	(7) Former Convicts	(8) Former Convicts	(9) Sexual Minorities	(10) Sexual Minorities	(11) North Korean Defectors	(12) North Korean Defectors	(13) Refugees	(14) Refugees
Fear Treatment	-0.001 (0.006)	-0.004 (0.006)	-0.021* (0.011)	-0.022** (0.011)	0.004 (0.009)	0.005 (0.009)	-0.018** (0.009)	-0.016* (0.009)	-0.007 (0.012)	-0.014 (0.012)	0.000 (0.011)	-0.001 (0.011)	-0.037*** (0.012)	-0.041*** (0.012)
R ²	0.000	0.020	0.001	0.050	0.000	0.030	0.001	0.054	0.000	0.139	0.000	0.042	0.002	0.046
Reported Fear	0.001 (0.003)	-0.002 (0.003)	0.028*** (0.006)	0.017*** (0.006)	0.003 (0.005)	0.002 (0.005)	0.014*** (0.005)	0.008 (0.005)	-0.004 (0.007)	0.011* (0.007)	0.031*** (0.006)	0.018*** (0.006)	0.024*** (0.006)	0.012* (0.007)
R ²	0.000	0.020	0.003	0.051	0.000	0.030	0.001	0.054	0.000	0.139	0.004	0.043	0.002	0.045
IV Fear	-0.012 (0.055)	-0.036 (0.055)	-0.192* (0.110)	-0.203* (0.108)	0.037 (0.083)	0.044 (0.083)	-0.166* (0.089)	-0.141 (0.086)	-0.068 (0.115)	-0.126 (0.111)	0.001 (0.099)	-0.009 (0.098)	-0.342** (0.133)	-0.375*** (0.133)
Obs. Control	6,472 No	6,199 Full	6,472 No	6,199 Full	6,472 No	6,199 Full	6,472 No	6,199 Full	6,472 No	6,199 Full	6,472 No	6,199 Full	6,472 No	6,199 Full

Also similar pattern for
Foreign Immigrants,
Former Convicts,
Refugees

And Again:

- Fear Treatment reduces antagonism
- But Reported Fear positively correlated with antagonism

Mechanisms

Effect of fear as mediated by media / social preferences

Heterogeneity (media)

IF [conservative media = High]



VS.

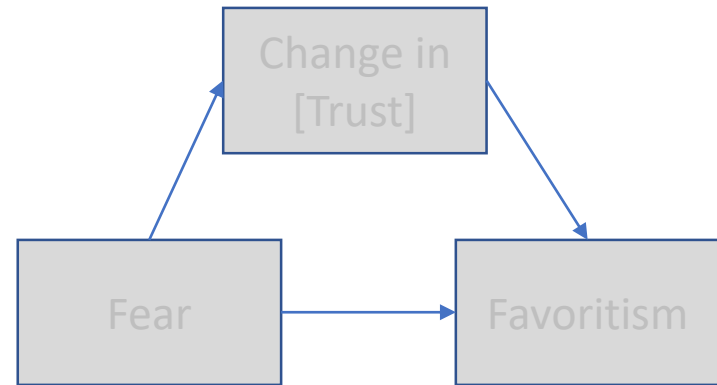
IF [conservative media = Low]



Mediation (soc prefs)



VS.



Heterogeneity/Interaction effects:

Political Ideology and Media

- **Conservative Ideology is associated with out-group antagonism and makes the effect of reported fear insignificant.**
(Interaction effects are not significant though.)

Consistent with idea that reported fear is a proxy for conservative ideology.

- The association between **reported fear and out-group antagonism is larger for those who read Conservative newspapers** (i.e. interaction effect is significant)

The Effect of Fear is Amplified by reported media consumption.

(Full disclosure: our media treatment yielded no significant differences)

Mechanisms

Effect of fear as mediated by media / social preferences

Heterogeneity (media)

IF [conservative media = High]



VS.

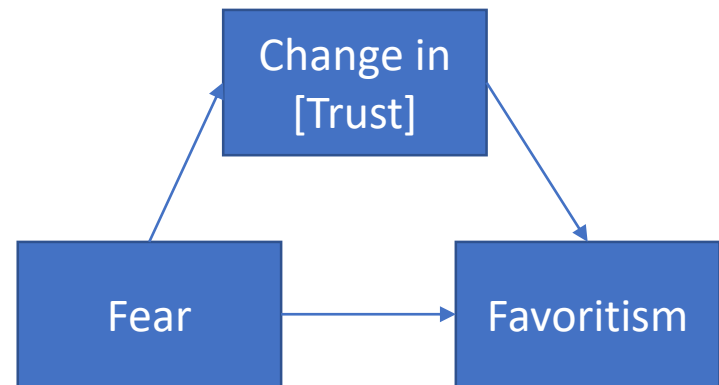
IF [conservative media = Low]



Mediation (soc prefs)



VS.



Effect of Fear on Social Preferences

(first stage of mediation analysis)

VARIABLES	(1) Altruism	(2) Altruism	(3) Pos. Rec.	(4) Pos. Rec.	(5) Neg. Rec.	(6) Neg. Rec.	(7) Trust	(8) Trust
Fear Treatment	0.039*	0.041*	0.014	0.005	0.004	-0.001	0.044*	0.047*
	(0.022)	(0.021)	(0.021)	(0.021)	(0.021)	(0.020)	(0.025)	(0.025)
R^2	0.000	0.117	0.000	0.071	0.000	0.066	0.000	0.066
Reported Fear	-0.047***	-0.030**	-0.035***	-0.021*	-0.015	-0.004	-0.011	0.005
	(0.012)	(0.012)	(0.011)	(0.012)	(0.011)	(0.011)	(0.014)	(0.014)
R^2	0.002	0.117	0.001	0.072	0.000	0.066	0.000	0.065
IV Estimates	0.358*	0.373*	0.131	0.044	0.036	-0.010	0.402	0.431*
	(0.217)	(0.209)	(0.197)	(0.190)	(0.190)	(0.185)	(0.245)	(0.242)
Obs.	6,472	6,199	6,472	6,199	6,472	6,199	6,472	6,199
Control	No	Full	No	Full	No	Full	No	Full

Our Fear Treatment
Increased Altruism, Trust
($p < 0.10$)

Note Nguyen and Noussair
2014 find fear also associated
with risk aversion.

Average Causal Mediation Effect (ACME)

Only altruism formally mediates effect of fear

	Altruism		Positive Reciprocity		Negative Reciprocity		Trust	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
ACME	0.023*	0.062	0.0057	0.504	0.00016	0.926	0.0025	0.170
ADE	0.120*	0.074	0.1377**	0.046	0.14528**	0.042	0.1429**	0.042
Total Effect	0.143**	0.024	0.1435**	0.040	0.14544**	0.040	0.1454**	0.042
Prop. Mediated	0.163*	0.086	0.0364	0.500	0.00030	0.922	0.0142	0.204

Standard errors in parentheses

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

Total Effect of Treatment
on Donations: *0.143*

Mediation Effect (ACME)
of Altruism: *0.023*

(or about 16.3% of total
effect)

Estimates using a
generalized mediation
estimate
(Imai et al 2011)
(although probably fails sequential
ignorability, sensitivity analysis TBD)

Effect of Fear, by type of fear.

	(1) Ingroup	(2) Outgroup	(3) Total	(4) Seek Info
Fear: Health	0.133 (0.110)	0.319*** (0.092)	0.452*** (0.136)	0.042** (0.017)
Fear: Economic	-0.279** (0.129)	-0.064 (0.108)	-0.344** (0.160)	0.033 (0.020)
Fear: Other	0.213 (0.169)	0.269* (0.142)	0.482** (0.209)	0.098*** (0.027)
Constant	2.227*** (0.059)	1.357*** (0.050)	3.584*** (0.074)	0.467*** (0.009)
Observations	5,879	5,879	5,879	5,299
R ²	0.002	0.003	0.004	0.003

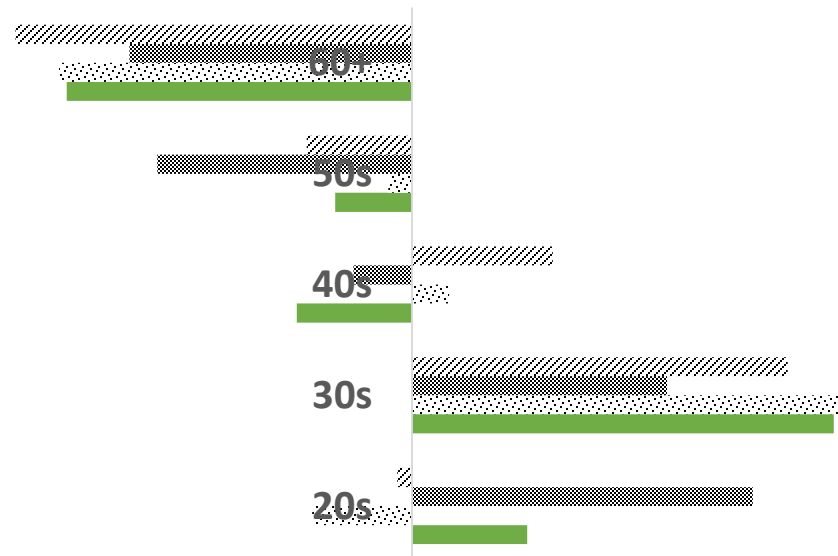
Note:

*p<0.1; **p<0.05; ***p<0.01

(A little bit of) External Validity:

Correlation between reported fear and Δ Pro-social attitudes by Age

Fear and Change in Pro-Social Attitudes by Outgroup and Province (Normalized)



▨ Immigrant Neighbors (KGSS 2010)

▩ Korean-chinese (KGSS 2010)

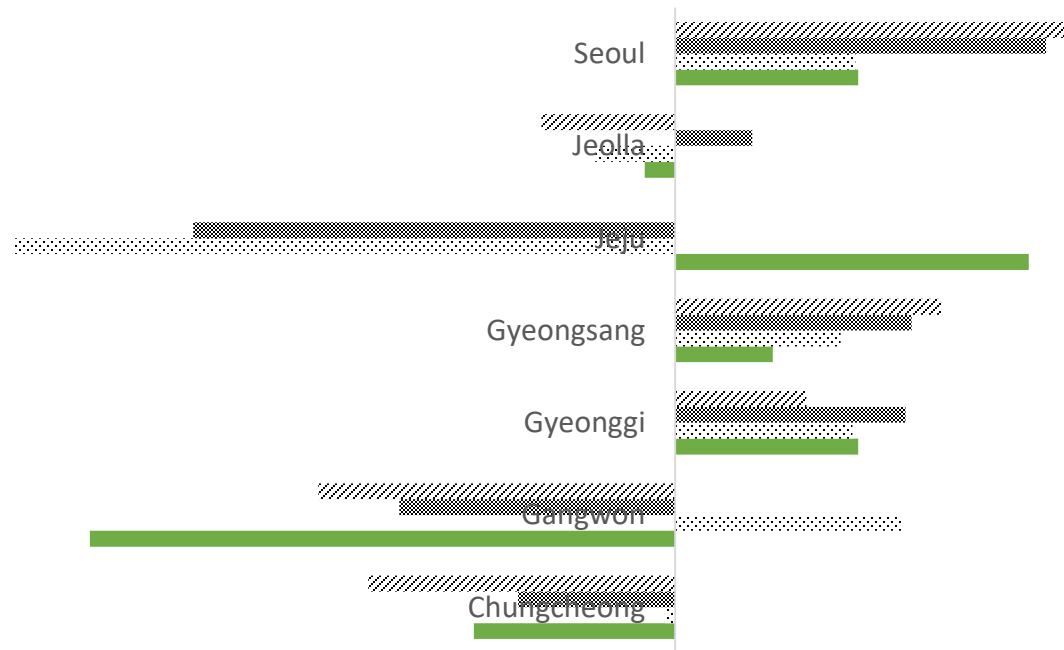
⋯ Foreign workers (KGSS 2010)

■ Reported Fear (Our Data)

(A little more) External Validity:

Correlation between reported fear and Δ Pro-social attitudes by Province

Fear and Change in Pro-Social Attitudes by Outgroup and Province (Normalized)



▨ Immigrant Neighbors (KGSS 2010)

▣ Korean-Chinese (KGSS 2010)

⋯ Foreign Production Workers (KGSS 2010)

■ Reported Fear (Our Data)

Understanding *America* Study (USC CESR)

EI023: There are too many people hanging around on the streets near my home

	(1) PHQ4	(2) ei023	(3) ei023	(4) ei023	(5) ei023
# of Friends Hospitalized	0.0173** (0.00616)	0.0121*** (0.00173)			
PHQ4 Score (Anxiety, Worried, Depressed)			0.0498*** (0.00105)	0.697** (0.250)	0.00834*** (0.00123)
	OLS	OLS	OLS	IV	FE (ID, T)
N	60874	60807	67391	60756	67182

Standard errors in parentheses

=** p<0.05

** p<0.01

*** p<0.001"

PHQ4

Patient Health Questionnaire (Kroenke et al, 2009)

- Number of days feeling anxious in past two weeks
- Number of days depression in past two weeks
- Number of days little interest in activities in past two weeks
- Number of days excessive worrying in past two weeks

Anxiety and Worry associated with more dislike of strangers.

(using both # of Friends hospitalized as an IV for anxiety AND a fixed effects model including person, day fixed effects)

Conclusions

Results Relevant for:

- Political Persuasion
- Effect of Covid-19 on politics
- Impact of fear in the Media

But:

- New Yorkers nightly clapping
- Korean and Spanish language groups topping US pop charts
- Record charitable giving

