

# Media Matters

## Media as a development tool

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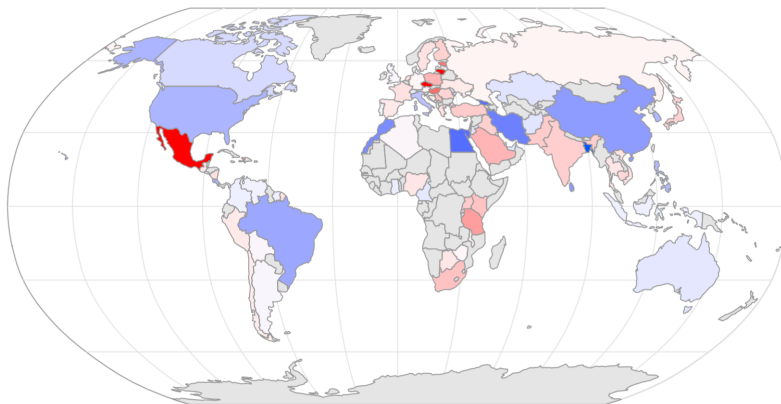
- By the end of this talk, I hope to convince you that Media—which includes stuff like TV shows, radio broadcasts, and news channels—changes the way people act.
- The power of media to induce economic development is *extremely promising*.

# Economists like to take utility/preferences as given

- Gary Becker: “Since economists have little to contribute ... to the understanding of how preferences are formed, preferences are assumed not to change substantially over time, nor to be very different between wealthy or poor persons, or even between persons in different societies and cultures.”

# Evidence on Global Preference Heterogeneity: Falk et al. (2018), published in the *Quarterly Journal of Economics*

Altruism



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- I feel like there's a lot more attempts to convince people in political science/social psychology/public health because they don't have this aversion towards changing preferences [Claim not systematically checked. I'm 70% certain this is the case].
  - Cavaet: There is a small and growing literature studying preference formation in economics.

# Spotlight on Riley (2022): Role models in movies: The impact of Queen of Katwe on students' educational attainment

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- The movie showing costs \$3 for the ticket and \$2 to transport students to the movie theater.
- Approx. one malaria net per pupil.

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- Two years later, the tenth graders who saw *The Queen of Katwe* are 12 percentage points more likely to take the final 12th grade exam (once again closing the gender gap with males).

There are a lot more examples: Download the slides at [timhua.me/eagx.pdf](https://timhua.me/eagx.pdf) to see one-sentence summaries of some of these in the appendix

- Media in general
  - Alatas et al. (2019) Banerjee et al. (2019) Kearney and Levine (2015) Jensen and Oster (2009) Armand et al. (2020) Jacobsen (2011) Yanagizawa-Drott (2014) Ang (2022) Wang (2021) Adena et al. (2015) Chen (2021) Gagliarducci et al. (2020) Rubin (2014) La Ferrara et al. (2012) Xiong (2021) Olken (2009)
- Fox news
  - DellaVigna and Kaplan (2007) Martin and Yurukoglu (2017) Clinton and Enamorado (2014) Knill et al. (2022) Crabtree and Poyker (2021) Ananyev et al. (2021) Ash and Poyker (2021) Ash et al. (2020) Ash et al. (2022) Li and Martin (2022)
- EA Forums post on cost effectiveness of various mass media public health interventions [link]

# Concrete steps

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- Someone should convince Disney to broadcast *Queen of Katwe* for free in Uganda.

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- Can we make people want to work harder? (There is evidence of media increasing aspirations (Bernard et al., 2022))
- My take? Media could almost certainly shift these attitudes (97% certain), but it would be very hard for us to do this consciously.

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- Example of major media-driven cultural change in the past: “Cities with at least one printing press by 1500 were at minimum 29 percentage points more likely to be Protestant by 1600.” (Rubin, 2014)
- Power of media to do harm is enormous. (See appendix)

# My senior thesis about Fox News and Culture

- Previous studies have shown that Fox convinces people to vote for Republicans (DellaVigna and Kaplan, 2007; Martin and Yurukoglu, 2017; Ash et al., 2022), increase police killings of Blacks in Florida (Crabtree and Poyker, 2021), and more

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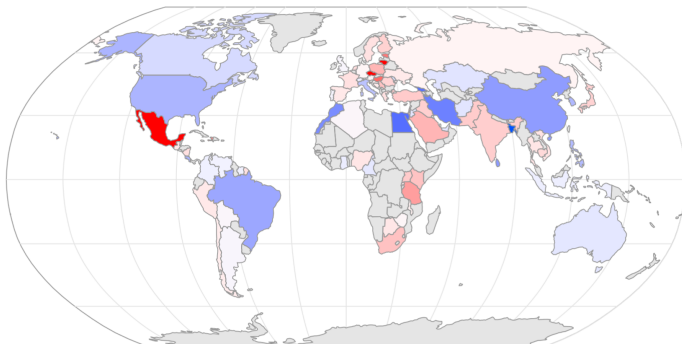
# Appendix

More goodies

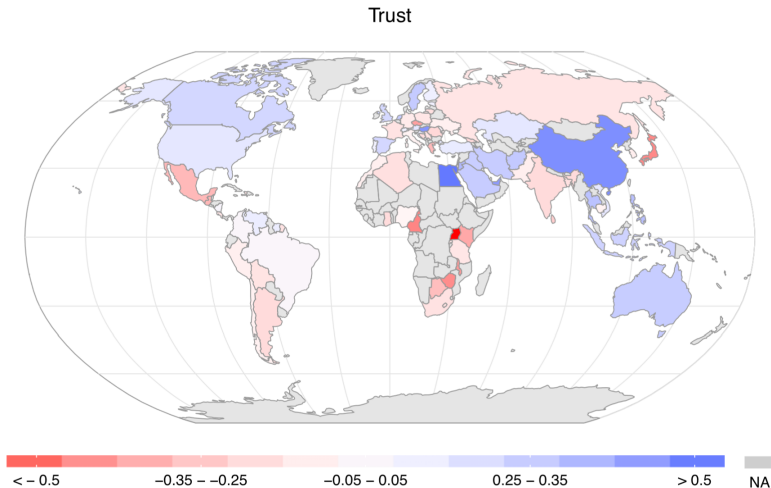
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- Normalized score, blue means more altruistic, measured using two survey questions asking about how much someone would donate 1000 euros/their general willingness to “give to good causes without expecting anything in return”

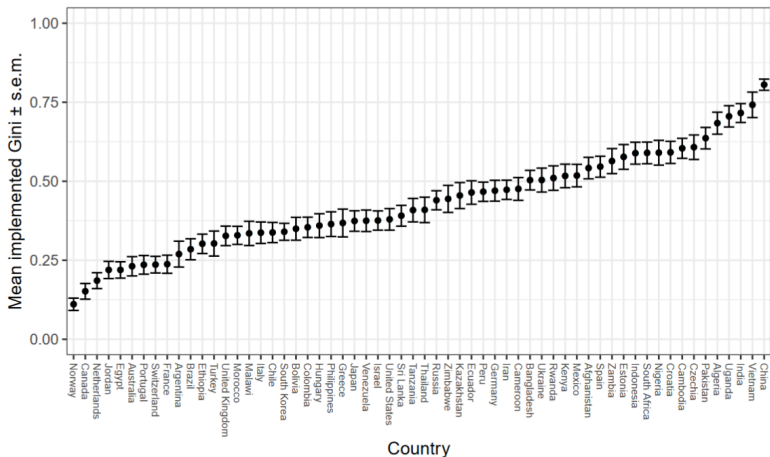
Altruism



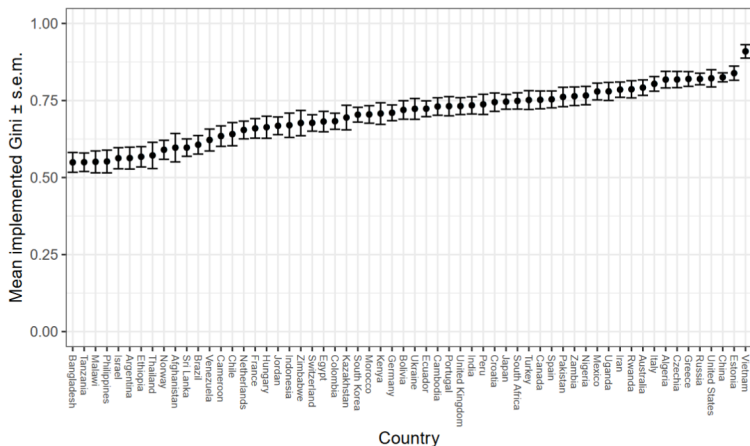
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# Global Preference Heterogeneity: Almås et al. (2020): Lower numbers means more egalitarian when unfair outcomes are due to luck)



# Global Preference Heterogeneity: Almås et al. (2020): Lower numbers means more egalitarian when unfair outcomes are due to merit/skill



Merit treatment



# Past research on Fox

- Fox news was rolled out starting December 1996, and by around 2006 it was available in most zip code.
- DellaVigna and Kaplan (2007) found a 0.4-0.7 percentage point increase in votes for Bush in the 2000 share among counties that have rolled out Fox compared to those who haven't.
- Martin and Yurukoglu (2017) found that one-standard-deviation decrease in Fox News's channel position is associated with 0.3 percentage point increase in Republican vote share
- There's a lot more! There's Clinton and Enamorado (2014) Knill et al. (2022) Crabtree and Poyker (2021) Ananyev et al. (2021) Ash and Poyker (2021) Ash et al. (2020) Ash et al. (2022) Li and Martin (2022)

# Examples of media doing good: I

- Breza et al. (2021) ran Ads on Facebook featuring short videos by physicians and nurses telling Americans to stay home during Thanksgiving and Christmas, found that they are effective in telling individuals to stay home and led to a 3.5% reduction in COVID-19 cases.
- Kate Orkin [link] has a lot of work on using media to shift aspirations. They showed rural individuals in Ethiopia in 2010 these documentary videos of how others have escaped poverty. They found that, “five years later, treated household heads report higher labour supply, more use of agricultural inputs and increased education spending. They have accumulated more assets, their children have attained more years of schooling, and they have increased asset wealth, housing quality and food security.” (Bernard et al., 2022)
- Celebrity endorsements on Twitter is effective in driving a vaccination campaign (Alatas et al., 2019)
- Banerjee et al. (2019) showed individuals a TV show that educated them about HIV, increased individuals testing for HIV, and reduced Chlamydia rates.



## Examples of media doing good: II

- MTV's *16 and Pregnant* reduced teen pregnancies by 4.2% between 2009 and 2010, which represents 24% of the total decline in that period (Kearney and Levine, 2015)
- Chen (2021) Exposure to the Amos 'n' Andy show—the first Black sitcom—reduced the Black-White infant mortality gap and increased the probability that a white child will attend an integrated school.
- “Introduction of cable TV decreases the differences in attitudes and behaviors [towards women] between urban and rural areas by 45% to 70%” (e.g., Is it acceptable to for a husband to beat his wife) (Jensen and Oster, 2009)
- “A one standard deviation increase in signal strength [of BBC Radio in Fascist Italy] increases the number of episodes of Nazi-fascist violence related to partisan and civilian resistance by almost three times” (Gagliarducci et al., 2020)

## Examples of media doing good: III

- Broadcasting radio messages urging a rebel group to defect causes defections, reduces fatalities, and reduces attacks on civilians. (Armand et al., 2020)
- Watching Al Gore's *An Inconvenient Truth* lead to more purchases of carbon offsets, but the effect fades a year later (Jacobsen, 2011)

## Examples of media doing bad:

- A single pro-genocide radio station is accountable for 10% of the violence in the Rwandan Genocide (Yanagizawa-Drott, 2014)
- “Instrumenting for roadshow destinations using the location of theaters prior to the movie’s release, I show that [*The Birth of a Nation*] significantly increased local Klan support in the 1920s...for counties in Kansas, where *The Birth of a Nation* was banned by the governor, historical theater stock is uncorrelated with future Klan presence.” (Ang, 2022)
- A one standard deviation increase in exposure to Father Coughlin’s anti-semitic radio station “was associated with 15 percent lower per capita purchase of war bonds in 1944” (Wang, 2021)
- Nazi radio propaganda was effective overall and especially effective in areas with historically high anti-semitic views. It has the opposite effect in areas with historically low anti-semitic views (Adena et al., 2015)

## Media doing things:

- “Cities with at least one printing press by 1500 were at minimum 29 percentage points more likely to be Protestant by 1600.” (Rubin, 2014)
- Soup Operas featuring small families caused birth rates to fall among its viewers, especially among poorer women (La Ferrara et al., 2012).
- TV led to less social groups and less trust in rural Indonesia (Olken, 2009)
- Reagan’s tenure as the host of *The G.E. Show* increased votes for him in the 1980 presidential election (Xiong, 2021)

# Bibliography I

- Adena, M., R. Enikolopov, M. Petrova, V. Santarosa, and E. Zhuravskaya (2015, 07). Radio and the Rise of The Nazis in Prewar Germany \*. *The Quarterly Journal of Economics* 130(4), 1885–1939.
- Alatas, V., A. G. Chandrasekhar, M. Mobius, B. A. Olken, and C. Paladines (2019, February). When celebrities speak: A nationwide twitter experiment promoting vaccination in indonesia. Working Paper 25589, National Bureau of Economic Research.
- Almås, I., A. Cappelen, E. Sørensen, and B. Tungodden (2020). Fairness Across the World: Preferences and Beliefs.
- Ananyev, M., M. Poyker, and Y. Tian (2021, July). The safest time to fly: pandemic response in the era of Fox News. *Journal of Population Economics* 34(3), 775–802.
- Ang, D. (2022). The Birth of a Nation: Media and Racial Hate. *HKS Faculty Research Working Paper Series RWP20-038*.
- Armand, A., P. Atwell, and J. F. Gomes (2020, May). The reach of radio: Ending civil conflict through rebel demobilization. *American Economic Review* 110(5), 1395–1429.
- Ash, E., S. Galletta, D. Hangartner, Y. Margalit, and M. Pinna (2020, June). The Effect of Fox News on Health Behavior During COVID-19.
- Ash, E., S. Galletta, M. Pinna, and C. Warshaw (2022, April). The Effect of Fox News Channel on U.S. Elections: 2000-2020.
- Ash, E. and M. Poyker (2021, December). Conservative News Media and Criminal Justice: Evidence from Exposure to Fox News Channel.
- Banerjee, A., E. La Ferrara, and V. H. Orozco-Olvera (2019, July). The entertaining way to behavioral change: Fighting hiv with mtv. Working Paper 26096, National Bureau of Economic Research.
- Bernard, T., S. Dercon, K. Orkin, G. Schinaia, and A. S. Taffesse (2022). The Future in Mind: Aspirations and Future-Oriented Behaviour in Rural Ethiopia.
- Breza, E., F. C. Stanford, M. Alsan, B. Alsan, A. Banerjee, A. G. Chandrasekhar, S. Eichmeyer, T. Glushko, P. Goldsmith-Pinkham, K. Holland, et al. (2021). Effects of a large-scale social media advertising campaign on holiday travel and covid-19 infections: a cluster randomized controlled trial. *Nature medicine* 27(9), 1622–1628.
- Chen, J. (2021). Media representation and racial prejudice : Evidence from the amos 'n' andy show.

# Bibilography II

- Clinton, J. D. and T. Enamorado (2014). The national news media's effect on congress: How fox news affected elites in congress. *The Journal of Politics* 76(4), 928–943.
- Crabtree, C. and M. Poyker (2021). Slanted media does not increase police killings. Discussion Papers 2021-06, Nottingham Interdisciplinary Centre for Economic and Political Research (NICEP).
- DellaVigna, S. and E. Kaplan (2007). The Fox News effect: Media bias and voting. *The Quarterly Journal of Economics* 122(3), 1187–1234.
- Falk, A., A. Becker, T. Dohmen, B. Enke, D. Huffman, and U. Sunde (2018, 05). Global Evidence on Economic Preferences\*. *The Quarterly Journal of Economics* 133(4), 1645–1692.
- Gagliarducci, S., M. G. Onorato, F. Sobbrío, and G. Tabellini (2020, October). War of the waves: Radio and resistance during world war ii. *American Economic Journal: Applied Economics* 12(4), 1–38.
- Henrich, J. P. (2021). *The WEIRD people in the world: how the West became psychologically peculiar and particularly prosperous* (First Picador paperback edition ed.). New York: Picador : Farrar, Straus and Giroux. OCLC: 1273710428.
- Jacobsen, G. D. (2011). The Al Gore effect: An inconvenient truth and voluntary carbon offsets. *Journal of Environmental Economics and Management* 61(1), 67–78.
- Jensen, R. and E. Oster (2009, 08). The Power of TV: Cable Television and Women's Status in India\*. *The Quarterly Journal of Economics* 124(3), 1057–1094.
- Kearney, M. S. and P. B. Levine (2015, December). Media influences on social outcomes: The impact of mtv's 16 and pregnant on teen childbearing. *American Economic Review* 105(12), 3597–3632.
- Knill, A., B. Liu, and J. J. McConnell (2022). Media partisanship and fundamental corporate decisions. *Journal of Financial and Quantitative Analysis* 57(2), 572–598.
- La Ferrara, E., A. Chong, and S. Duryea (2012, July). Soap operas and fertility: Evidence from brazil. *American Economic Journal: Applied Economics* 4(4), 1–31.
- Li, Z. and G. J. Martin (2022). Media and Ideological Movements: How Fox News built the Tea Party.

# Bibilography III

- Martin, G. J. and A. Yurukoglu (2017, September). Bias in cable news: Persuasion and polarization. *American Economic Review* 107(9), 2565–99.
- Olken, B. A. (2009, October). Do television and radio destroy social capital? evidence from indonesian villages. *American Economic Journal: Applied Economics* 1(4), 1–33.
- Riley, E. (2022, 01). Role Models in Movies: The Impact of Queen of Katwe on Students' Educational Attainment. *The Review of Economics and Statistics*, 1–48.
- Rubin, J. (2014, 05). Printing and Protestants: An Empirical Test of the Role of Printing in the Reformation. *The Review of Economics and Statistics* 96(2), 270–286.
- Wang, T. (2021, September). Media, pulpit, and populist persuasion: Evidence from father coughlin. *American Economic Review* 111(9), 3064–92.
- Xiong, H. (2021, October). The political premium of television celebrity. *American Economic Journal: Applied Economics* 13(4), 1–33.
- Yanagizawa-Drott, D. (2014, 11). Propaganda and Conflict: Evidence from the Rwandan Genocide. *The Quarterly Journal of Economics* 129(4), 1947–1994.