# Climate cooperation through more transparency

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What has been achieved so far?

Global annual CO2 emissions from fossil fuels

Beginning of climate negotiations

Source: Global Carbon Project

OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY
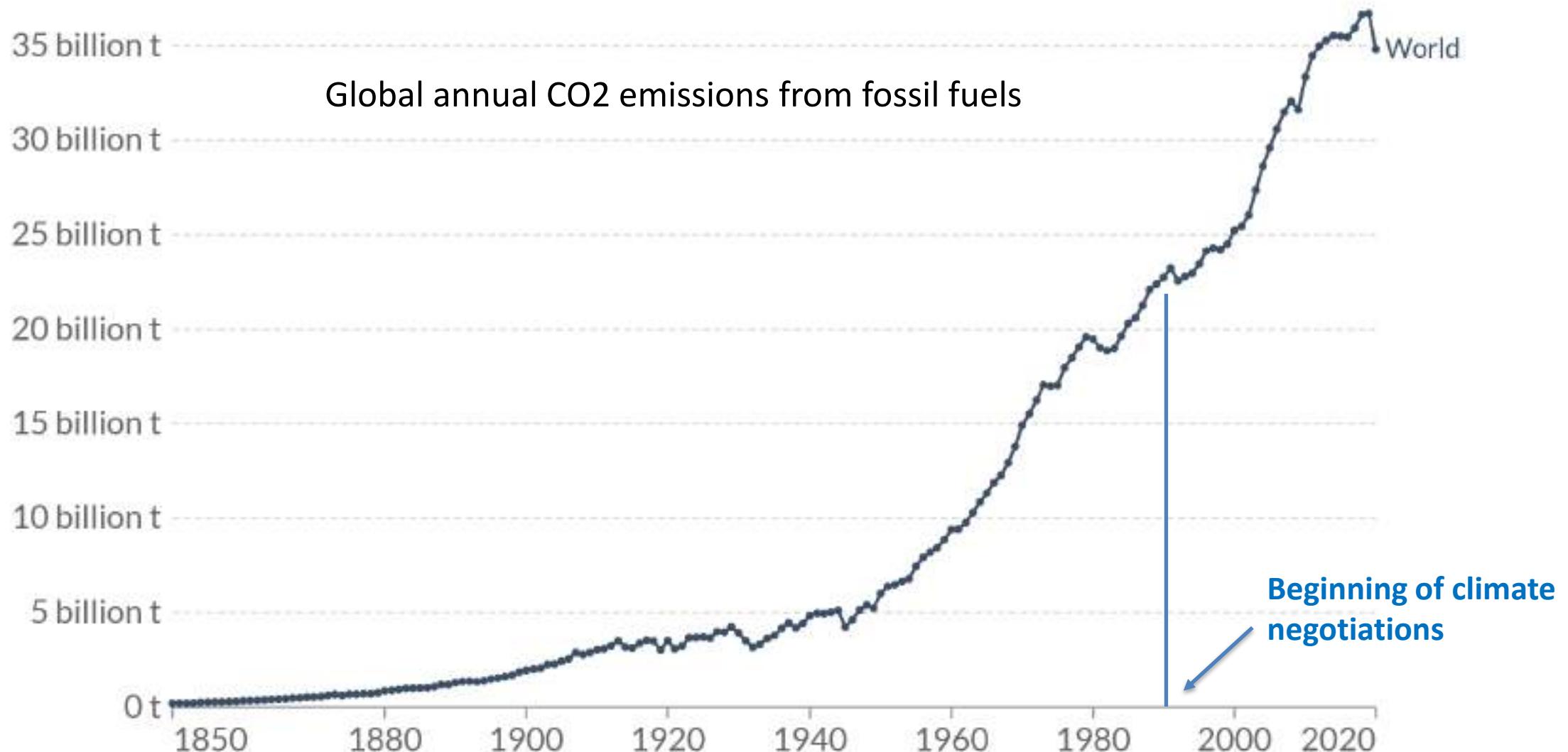
Paris Agreement
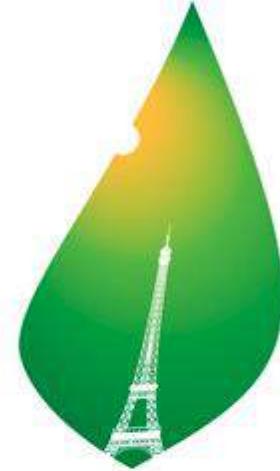
- Adopted on 12 December 2015.

- Entered into force on 4 November 2016.

- 193 Parties of 197 Parties to the Convention have ratified.
  - Including Brazil, Canada, China, the EU, India, Mexico, and the US (the US left and then re-entered the agreement).

Paris Agreement's approach

- Agree on a collective goal (2°C or if possible 1.5°C).

- All countries submit "Nationally Determined Contributions" (NDCs).

- *"In order to build mutual trust and confidence,"* create a *"transparency framework."* Track progress to determine whether countries fulfill their pledges.

- Expert review to identify *"areas of improvement."*

- Undertake *"global stocktaking"* and *"periodic adjustments."*

- (Other provisions on sinks, international mechanisms, adaptation, loss and damage, financial assistance.)

Effects of the NDCs
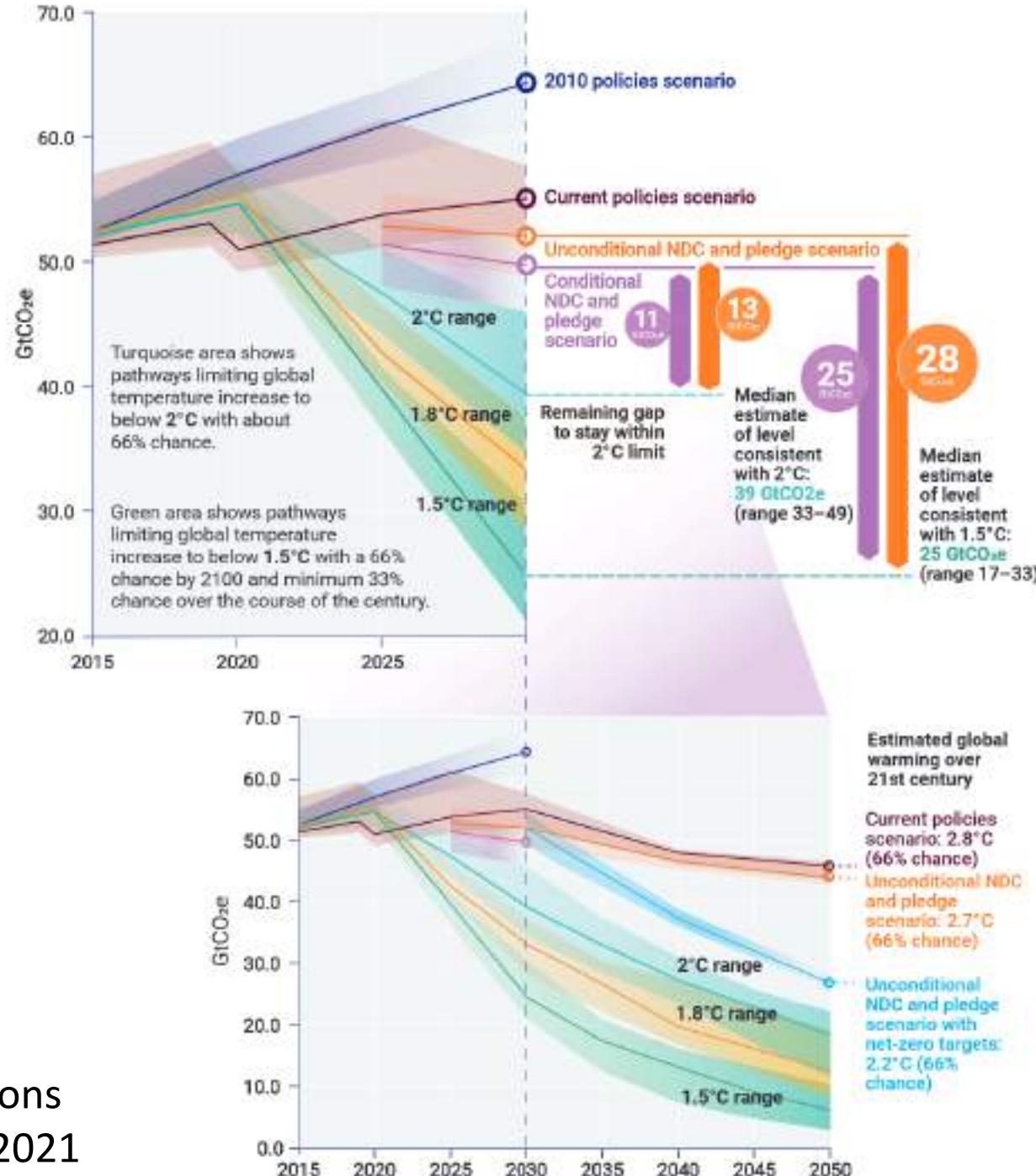
There is significant gap between what is pledged and what is needed to achieve the 1.5 or 2 degree target.

Collectively, countries are falling short of meeting their updated pledges with current policies.

UNEP Emissions Gap Report 2021

Will countries fulfill their NDCs?

The New York Times

Coral Davenport, "Paris Deal Would Herald an Important First Step on Climate Change" 29 November 2015.

"Here's another way to think about it: You are given a school assignment, but there won't be any punishment if you don't turn it in. However, you are required to attend an assembly with your peers and to show them your homework. The hope is that the 'student leaders,' the largest economies, will create *a dynamic of international pressure*."

What do we know about the effects of "naming and shaming"?

- Psychology and behavioral economics studies show robust effects on individuals' behavior

  - Experienced or induced shame can motivate pro-social behavior in prisoners' dilemma and ultimatum games (Ketelaar and Au 2003, De Hooge et al. 2008).

  - People behave more prosocially when they are observed by others ((Rege and Telle 2004, Andreoni and Petrie 2004, Samek and Sheremeta 2014, Christens et al. 2019).

  - Feedback among players (Masclet et al. 2003, López-Pérez and Vorsatz 2010).

- Does "naming and shaming" also influence group behavior?

An experimental test

(Joint work with Sven Christens
and Florian Sachs, JBEE 2019)
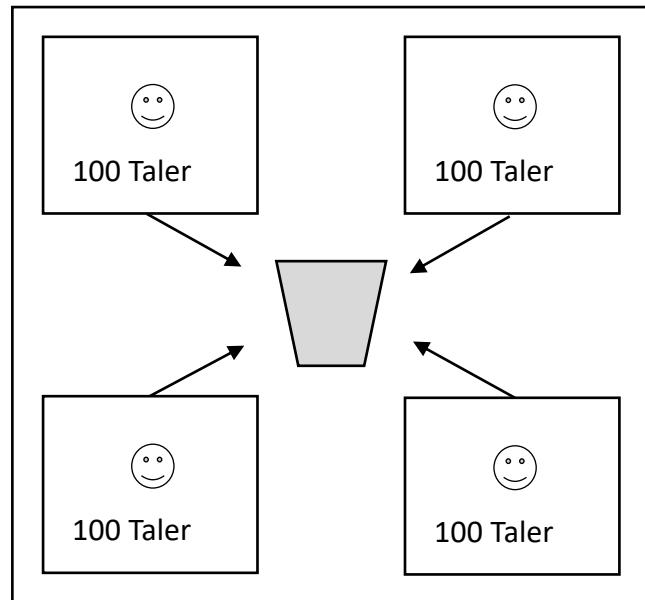
An experimental test
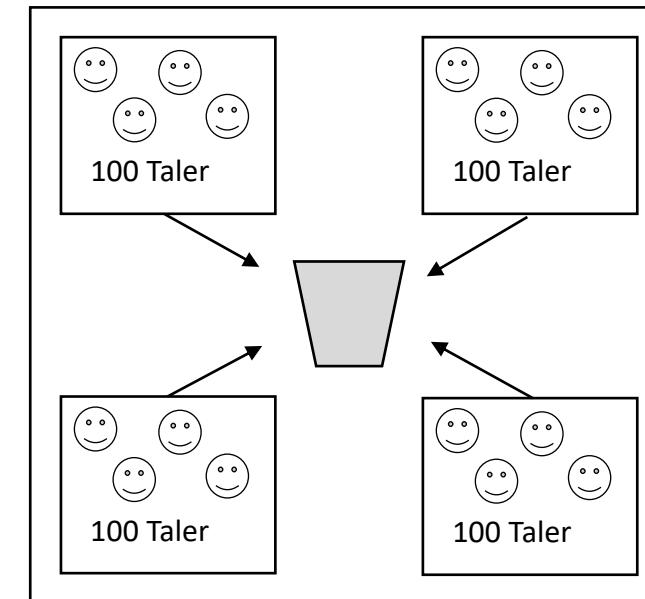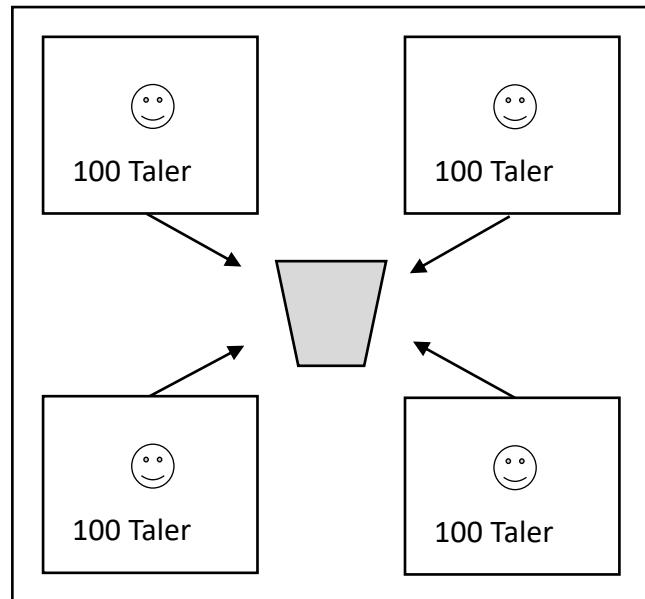
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An experimental test

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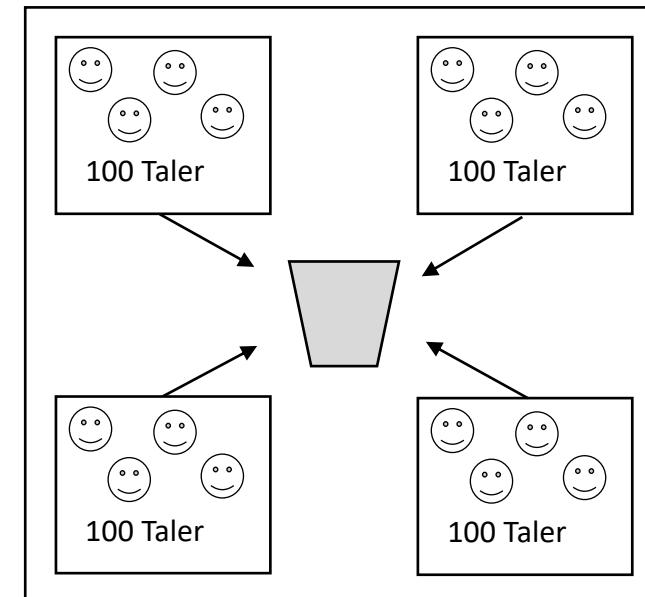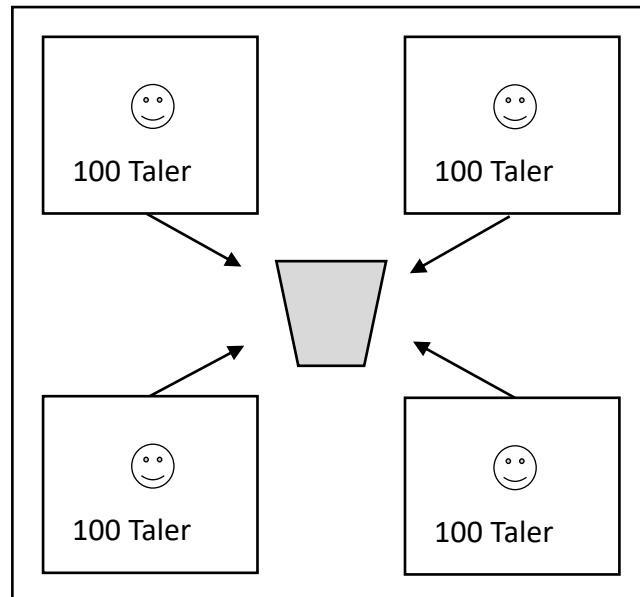
An experimental test

(Joint work with Sven Christens
and Florian Sachs)

	No identification	Identification
Individuals	*Indi-NoPic*	*Indi-Pic*
Teams	*Team-NoPic*	*Team-Pic*
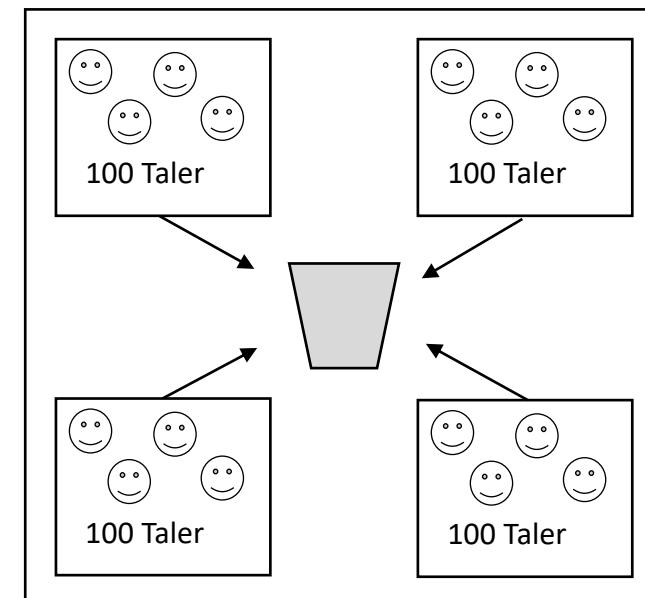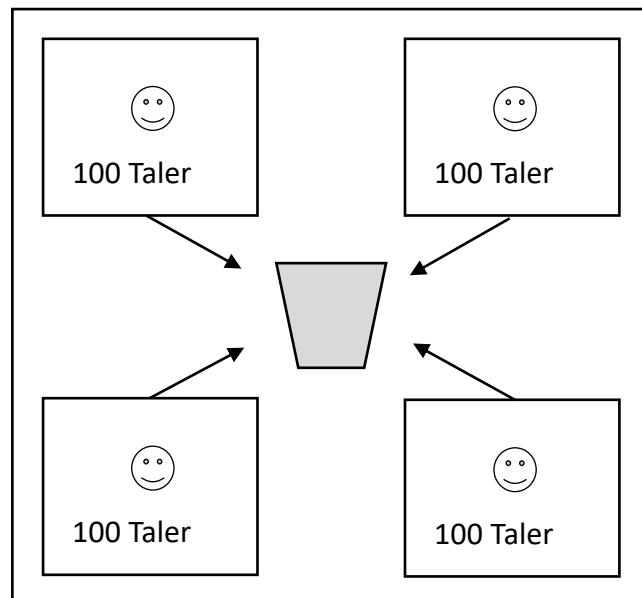
Shaming really is less important for groups
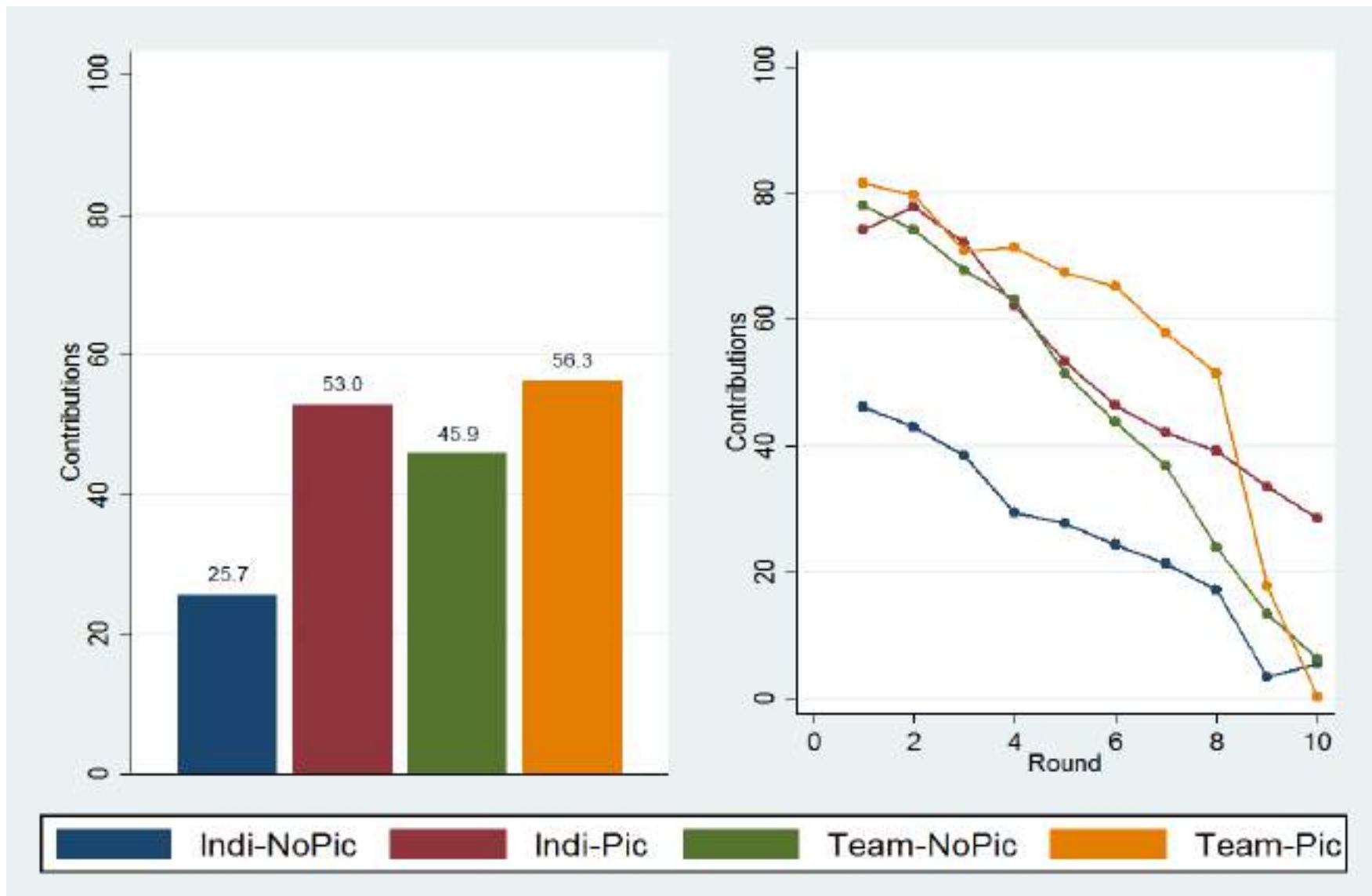
Sensitivity to what others think
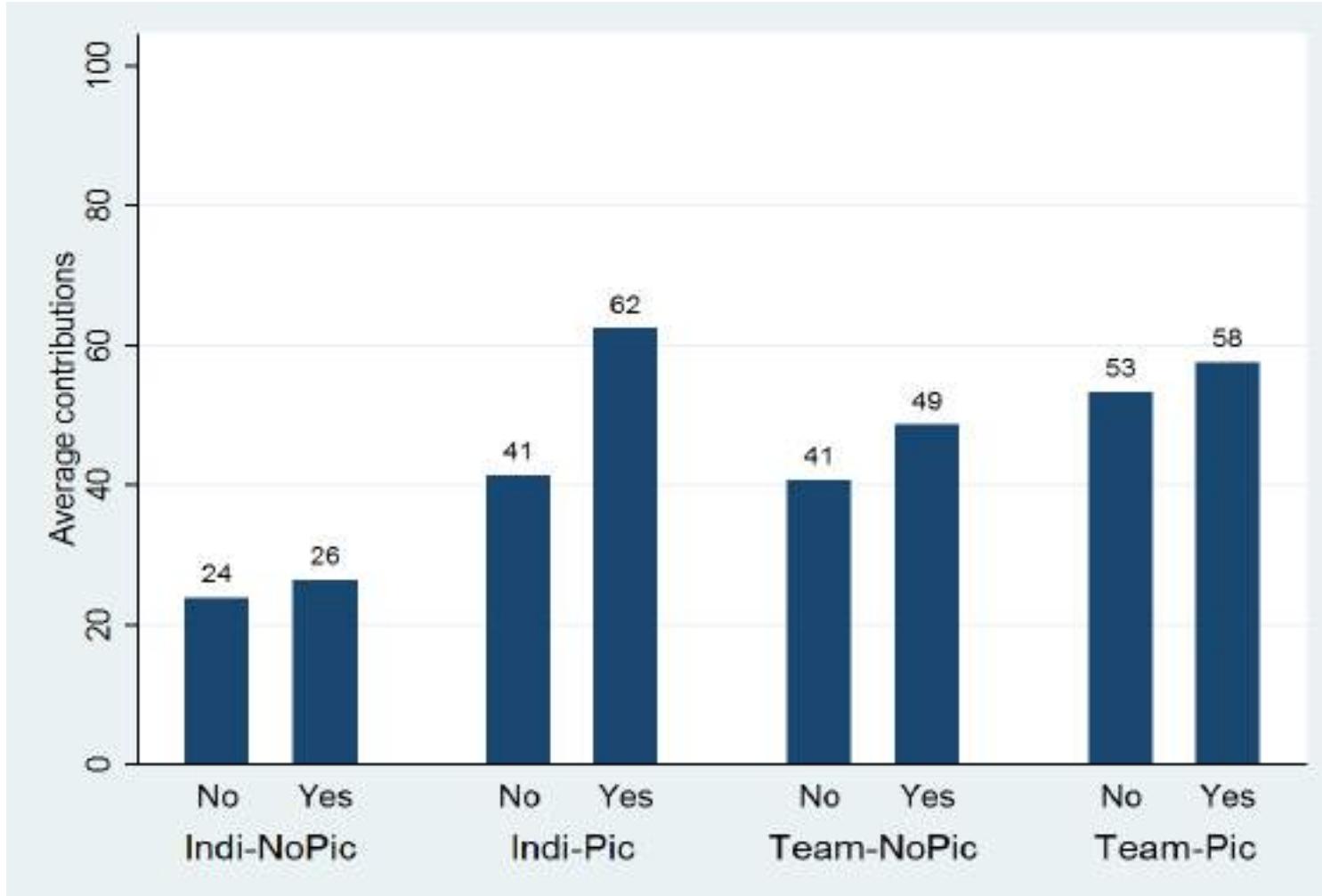
Ex-ante question to measure sensitivity to others' opinions:

How important is it for you what other people think of you?

Possible answers ranged from 1 (not at all) to 10 (very much).

Yes: Average answer 6 or higher

No: Average answer 5 or lower

Summary of main results

- Individuals are very sensitive to the display of pictures, groups much less so.

- Being in your group protects people from worrying too much about what others think about them.

Naming and shaming
in international relations

Naming and shaming mechanisms

Source: Kelley and Simmons, 2014
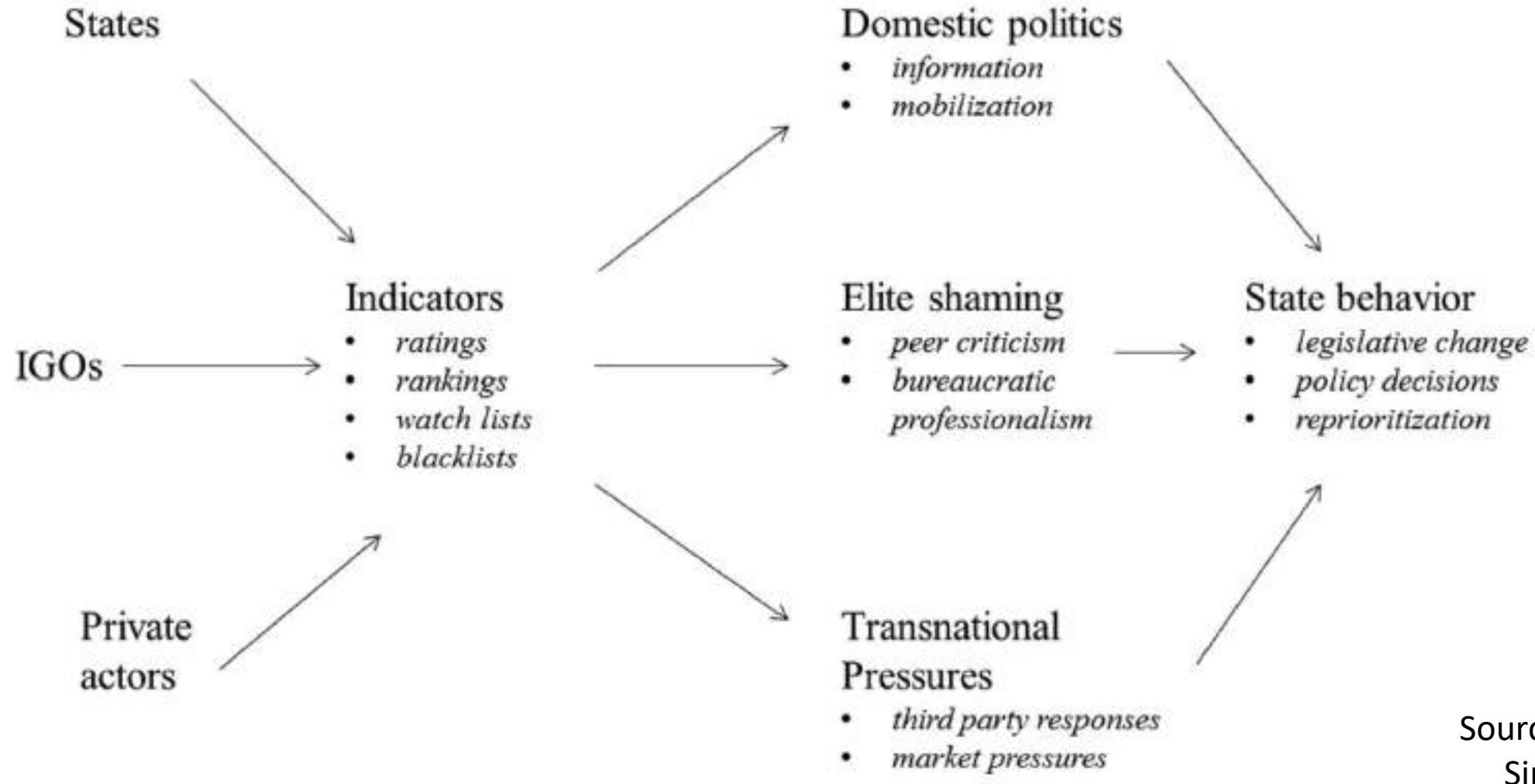
Studies in the context of human rights

- Empirical political science studies use cross-country panel data to examine improvement of human rights conditions following naming and shaming.

- Virtually all studies find an effect, usually but not always in the intended direction.

- Influencing factors:

  - Publicity source (NGO, media, UN, governments)
  - Reliance of target country on foreign aid and investment
  - Economic capacity of target country
  - Democratization of target country

Climate policy expert survey

(Joint work with David Victor and Marcel Lumkowsky)

Number of respondents by home country
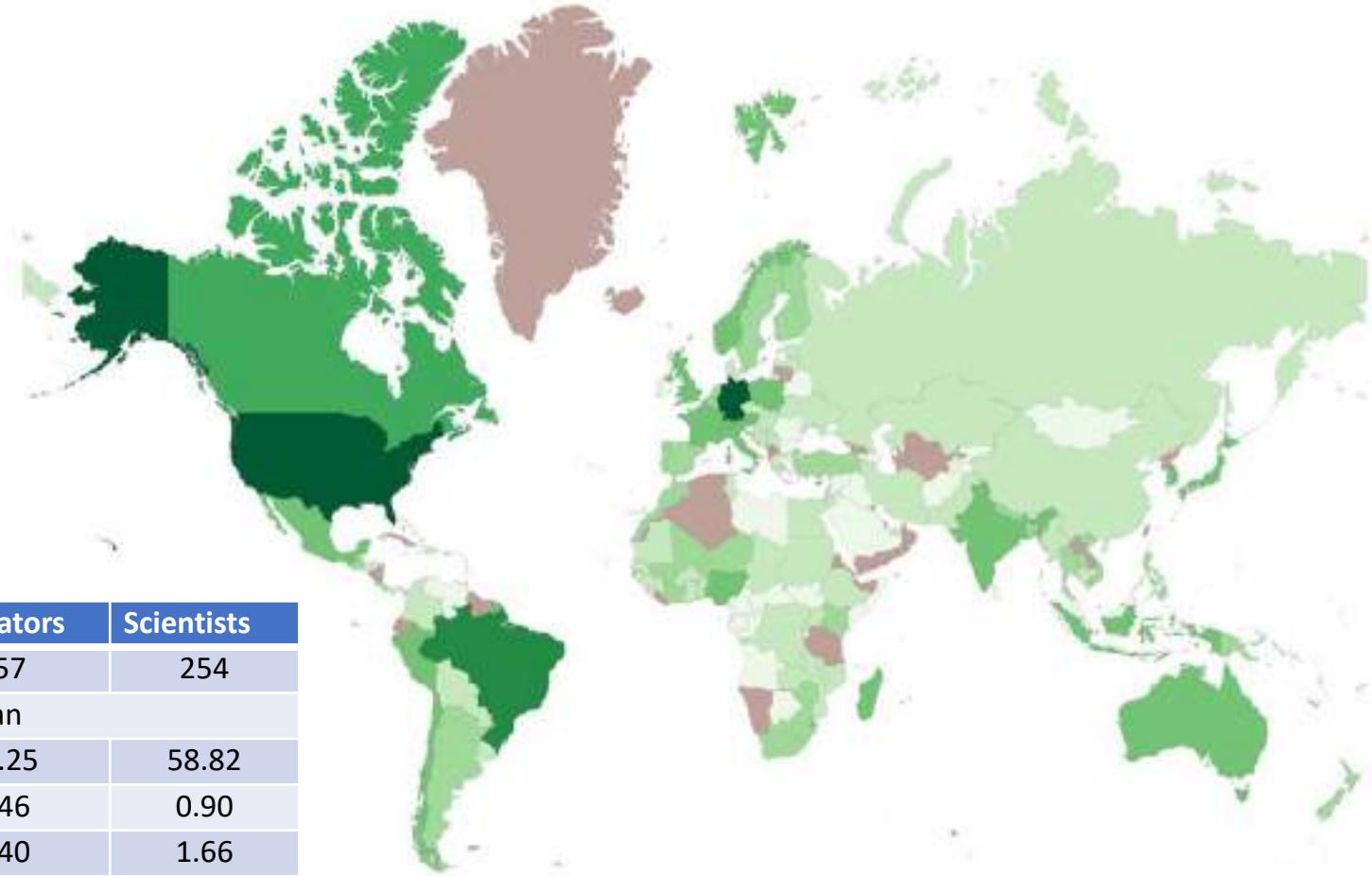
	Full Sample	Negotiators	Scientists
Respondents	911	657	254
	Mean		
Age	52.61	50.25	58.82
COPs as party member	3.48	4.46	0.90
COPs as observer	1.48	1.40	1.66
	Frequency		
Organization			
National or EU government	37.45%	45.99%	15.28%
International government	6.31%	7.13%	4.17%
Research	33.85%	19.79%	70.37%
Private sector	5.28%	6.24%	2.78%
NGO	9.52%	11.94%	3.24%
Other	7.59%	8.91%	4.17%

Legend: 41-65 / 31-40 / 21-30 / 11-20 / 6-10 / 2-5 / 1 / No respondents

How much do you agree that state-to-state peer pressure can be effective in raising countries' mitigation efforts?

How much do you agree that countries' mitigation efforts should be compared?

Is your home country more likely to comply with its NDC and increase its mitigation efforts because of the Paris transparency mechanisms?
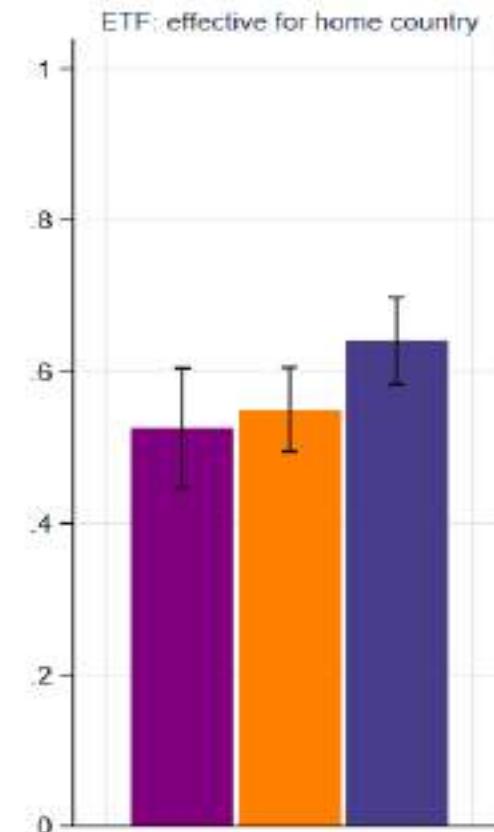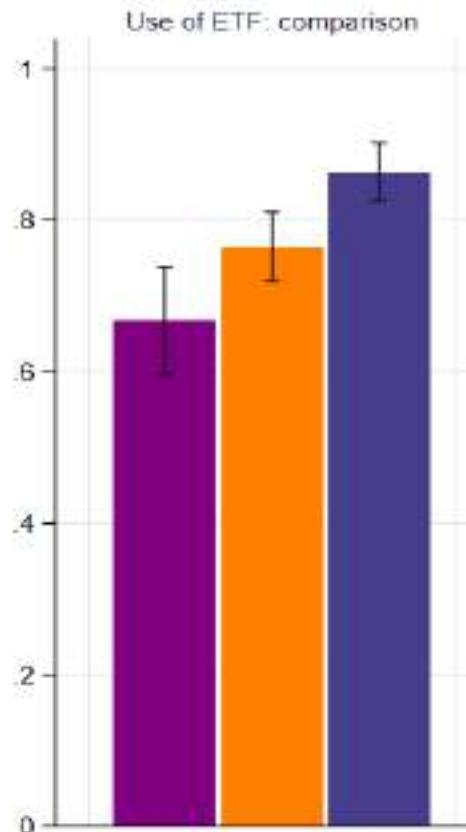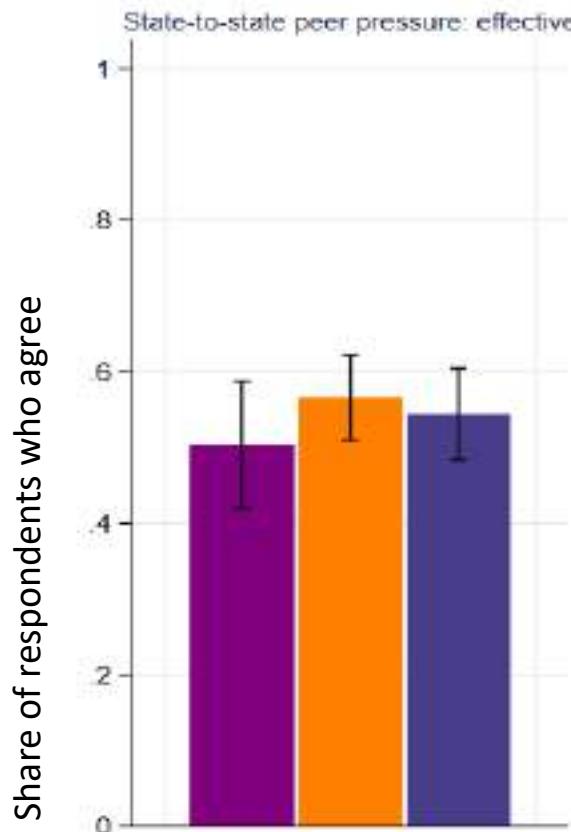
Marginal effects (at means) from binary Probit regressions. Dependent variable: state-to-state pressure effective in raising countries' mitigation efforts

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GDP per capita [s]	-0.0055						-0.0050		
	(0.0312)						(0.0334)		
CO2 per capita [s]		-0.0093							
		(0.0286)							
Institutional Quality [s]			-0.0485					-0.0525	
			(0.0324)					(0.0327)	
Polity [s]			**0.0714**					**0.0647***	
			(0.0291)					**(0.0331)**	
IO memberships [s]				-0.0096					0.0115
				(0.0304)					(0.0381)
CC Concern [s]					0.0353		0.0359	0.0144	0.0311
					(0.0276)		(0.0287)	(0.0335)	(0.0292)
NGOs per capita [s]						0.0204			0.0227
						(0.0253)			(0.0273)
Europe [d]	-0.0118	-0.0230	-0.0129	-0.0108	-0.0556	-0.0368	-0.0495	-0.0293	-0.0867
	(0.0649)	(0.0534)	(0.0655)	(0.0619)	(0.0631)	(0.0578)	(0.0701)	(0.0693)	(0.0715)
Ambition (Our Survey) [d]	-0.0488	-0.0458	-0.0713	-0.0444	-0.0551	-0.0422	-0.0551	-0.0710	-0.0502
	(0.0509)	(0.0514)	(0.0529)	(0.0499)	(0.0522)	(0.0502)	(0.0533)	(0.0532)	(0.0525)
Credibility (Our Survey) [d]	**0.1118**	**0.1185**	**0.1363**	**0.1159**	**0.1338**	**0.1153**	**0.1346**	**0.1492***	**0.1390**
	(0.0528)	**(0.0527)**	**(0.0570)**	**(0.0526)**	**(0.0560)**	**(0.0527)**	**(0.0560)**	**(0.0579)**	**(0.0563)**
ETF (B1) [d]	**0.1183**	**0.1211**	**0.1316***	**0.1220**	**0.1211**	**0.1176**	**0.1188**	**0.1272**	**0.1226**
	(0.0480)	**(0.0480)**	**(0.0509)**	**(0.0480)**	**(0.0501)**	**(0.0478)**	**(0.0502)**	**(0.0512)**	**(0.0503)**
Scientist [d]	0.0004	0.0108	0.0416	0.0119	0.0112	-0.0068	0.0108	0.0468	0.0093
	(0.0607)	(0.0599)	(0.0612)	(0.0599)	(0.0582)	(0.0575)	(0.0613)	(0.0613)	(0.0609)
Nat/Government [d]	-0.0742	-0.0742	-0.0334	-0.0714	-0.0797	-0.0745	-0.0790	-0.0350	-0.0743
	(0.0535)	(0.0539)	(0.0569)	(0.0538)	(0.0558)	(0.0533)	(0.0559)	(0.0575)	(0.0568)
Observations	454	452	414	456	425	457	424	410	424

Marginal effects (at means) from binary Probit regressions. Dependent variable: climate mitigation efforts should be compared

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GDP per capita [s]	0.0720***						0.0538**		
	(0.0268)						(0.0270)		
CO2 per capita [s]		0.0432*							
		(0.0228)							
Institutional Quality [s]			0.0519**					0.0529**	
			(0.0255)					(0.0259)	
Polity [s]			0.0688***					0.0586**	
			(0.0205)					(0.0231)	
IO memberships [s]				0.0684***					0.0327
				(0.0241)					(0.0296)
CC Concern [s]					0.0522**		0.0386*	0.0211	0.0397*
					(0.0208)		(0.0216)	(0.0251)	(0.0220)
NGOs per capita [s]						0.0603*			0.0403
						(0.0360)			(0.0324)
Europe [d]	0.0600	0.1263***	0.0061	0.0711	0.0685	0.0893**	0.0238	-0.0092	0.0217
	(0.0508)	(0.0385)	(0.0522)	(0.0470)	(0.0474)	(0.0434)	(0.0555)	(0.0572)	(0.0545)
Ambition (Our Survey) [d]	0.0882**	0.0871**	0.0773*	0.0724*	0.0643	0.0770*	0.0796*	0.0761*	0.0716*
	(0.0415)	(0.0419)	(0.0416)	(0.0414)	(0.0418)	(0.0409)	(0.0423)	(0.0420)	(0.0418)
Credibility (Our Survey) [d]	-0.0322	-0.0320	-0.0077	-0.0360	-0.0218	-0.0342	-0.0195	-0.0038	-0.0198
	(0.0420)	(0.0423)	(0.0436)	(0.0427)	(0.0432)	(0.0421)	(0.0430)	(0.0441)	(0.0429)
ETF (B1) [d]	0.1303***	0.1374***	0.1266***	0.1294***	0.1298***	0.1392***	0.1252***	0.1235***	0.1224***
	(0.0383)	(0.0382)	(0.0397)	(0.0385)	(0.0389)	(0.0378)	(0.0390)	(0.0399)	(0.0388)
Scientist [d]	0.0553	0.0714	0.0521	0.0634	0.0815*	0.0882**	0.0504	0.0516	0.0574
	(0.0487)	(0.0464)	(0.0473)	(0.0468)	(0.0423)	(0.0436)	(0.0482)	(0.0478)	(0.0462)
Nat/Government [d]	0.0396	0.0478	0.0368	0.0543	0.0417	0.0346	0.0354	0.0339	0.0409
	(0.0413)	(0.0412)	(0.0429)	(0.0414)	(0.0416)	(0.0408)	(0.0419)	(0.0435)	(0.0417)
Observations	469	467	429	471	441	472	440	425	440

Marginal effects (at means) from binary Probit regressions. Dependent variable: Home country more likely to comply and increase mitigation efforts because of Paris transparency

|	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GDP per capita [s]	0.0047 (0.0330)						-0.0372 (0.0352)		
CO2 per capita [s]		-0.0155 (0.0269)							
Institutional Quality [s]			0.0563* (0.0323)					0.0438 (0.0328)	
Polity [s]			0.0228 (0.0281)					-0.0184 (0.0324)	
IO memberships [s]				0.0752** (0.0319)					0.0272 (0.0385)
CC Concern [s]					0.0859*** (0.0279)		0.0964*** (0.0291)	0.0974*** (0.0340)	0.0781*** (0.0298)
NGOs per capita[s]						0.0204 (0.0268)			0.0209 (0.0278)
Europe [d]	-0.0281 (0.0688)	-0.0168 (0.0552)	-0.1184* (0.0677)	-0.1071 (0.0657)	-0.1299** (0.0652)	-0.0418 (0.0606)	-0.0981 (0.0739)	-0.1695** (0.0721)	-0.1725** (0.0738)
Ambition (Our Survey) [d]	0.0976* (0.0509)	0.0972* (0.0509)	0.0964* (0.0532)	0.1073** (0.0502)	0.1075** (0.0524)	0.1039** (0.0501)	0.0960* (0.0534)	0.1026* (0.0537)	0.1145** (0.0527)
Credibility (Our Survey) [d]	0.1919*** (0.0517)	0.1967*** (0.0517)	0.2200*** (0.0550)	0.2000*** (0.0518)	0.2323*** (0.0540)	0.1944*** (0.0517)	0.2318*** (0.0540)	0.2335*** (0.0556)	0.2363*** (0.0542)
ETF (B1) [d]	0.1710*** (0.0477)	0.1773*** (0.0478)	0.1418*** (0.0508)	0.1642*** (0.0481)	0.1589*** (0.0498)	0.1681*** (0.0476)	0.1641*** (0.0498)	0.1540*** (0.0510)	0.1600*** (0.0500)
Scientist [d]	0.0544 (0.0620)	0.0700 (0.0603)	0.0098 (0.0624)	0.0245 (0.0609)	0.0228 (0.0595)	0.0461 (0.0581)	0.0482 (0.0633)	0.0135 (0.0630)	0.0181 (0.0617)
Nat/Government [d]	-0.0375 (0.0543)	-0.0379 (0.0547)	-0.0722 (0.0577)	-0.0117 (0.0548)	-0.0452 (0.0570)	-0.0396 (0.0542)	-0.0408 (0.0573)	-0.0598 (0.0585)	-0.0345 (0.0579)
Observations	458	456	418	459	429	460	428	414	428

Motivation to fulfill NDCs

What do you think are the most important motivations for the fulfillment of your home country's NDC? (Please indicate 2-3 motivations.)
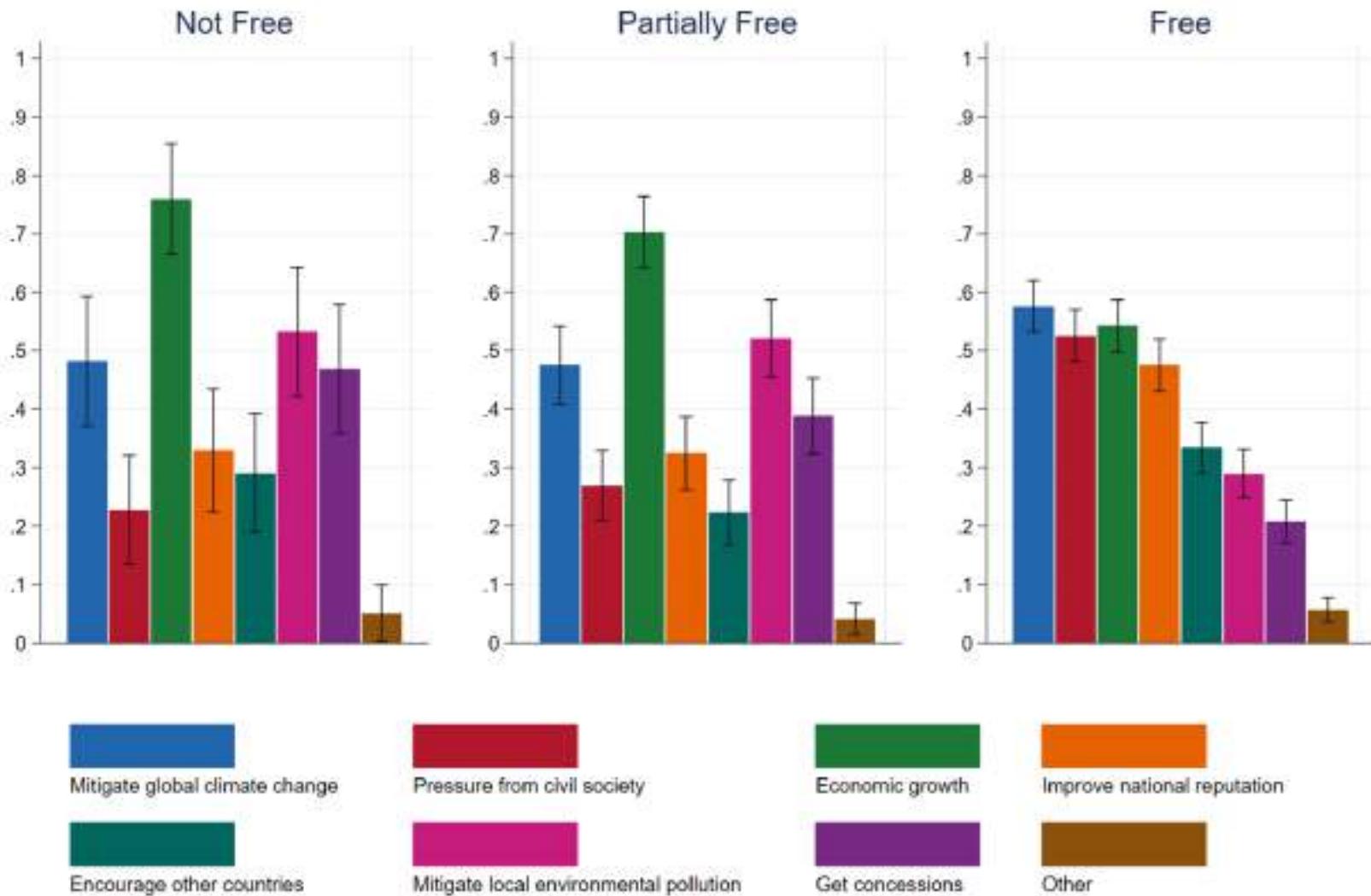
Who should compare?

If a comparison of countries' mitigation efforts is made, how much do you agree with the following organizations providing such a comparison?
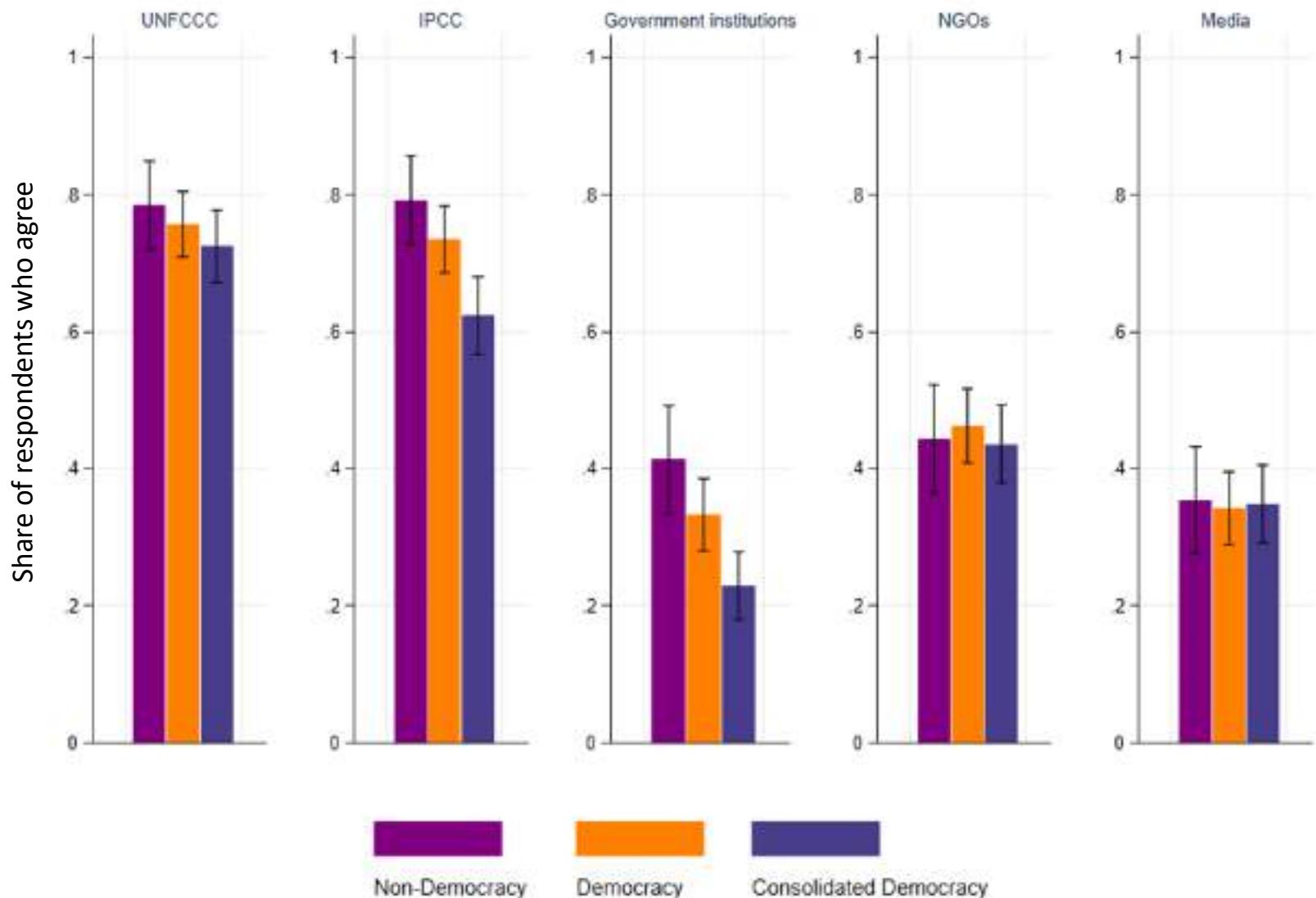
Summary of main results

- Rich countries with high-quality institutions tend to be more open and optimistic about the effects of transparency.

- The opportunity for civil pressure (democracy) and motivation (concern about climate change) are important influencing factors.

- The institutions that normally compare climate change efforts (media and NGOs) are not perceived as effective.