# Global Governance under Populism: The Challenge of Information Suppression

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**Abstract**

A large literature examines challenges to global governance, highlighting information suppression by member states as a key barrier to effective international organization. This paper investigates the circumstances under which states share their data and documents, arguing that they often withhold scientific information — which is necessary for global responses to many health and environmental challenges — when they are led by a populist. These leaders possess both the motivation and the means to conceal this information due to its "elitist" characterization. Using new data on the source and quality of information provided to IOs, we find that populist leaders are significantly less likely to provide scientific information to these organizations than are other types of leaders, but they are not less transparent regarding other information classes. Our findings suggest that populism may hinder international institutions' abilities to govern in several important areas.

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Scholars have long identified information provision as a fundamental function that international organizations (IOs) perform in order to solve a variety of cooperation problems. However, in many areas of global governance, states hold back key data and documentation. For example, many states have been slow or unwilling to offer the World Health Organization (WHO) critical information for fighting COVID-19;[1] they have been reticent to provide international organizations such as the United Nations with climate data;[2] and they have not released key development-related information to the International Monetary Fund.[3] Yet other countries have provided such information freely. What explains variation in which states are willing to supply information to global governing bodies?

Scholars have argued that whether information is provided depends on several factors, including whether a regime is democratic (Hollyer, Rosendorff, and Vreeland 2011*a*,*b*, 2018, 2019), whether the information is sensitive and could jeopardize national security (Coe and Vaynman 2020; Carnegie and Carson 2020; Slantchev 2010), and whether it will negatively impact international norms (Busch and Pelc 2010; Kydd 2006; Carnegie and Carson 2018; Poznansky 2020). We extend this literature by showing that a different logic pertains to information that is generated or verified by domestic elites, such as scientific information. Examples of such information needed by IOs include that pertaining to public health or the environment such as greenhouse gas emissions levels, disease incidence, and energy use.

Leaders often face large incentives to suppress scientific information since many investors and industry groups frequently benefit when they do so, such as firms engaging in activities governed by international conventions like pesticide use or fossil fuel consumption.[4] These actors often lobby governments to withhold information whose release could be detrimental to their bottom line. Moreover, leaders themselves may seek to hide such information when it reveals noncompliance with international rules and regulations, mismanagement, or is otherwise embarrassing or

[1] See Worsnop (2019)

[2] Bassett, Luke, Kristina Costa, and Lia Cattaneo, "Burning the Data: Attacks on Climate and Energy Data and Research," Center for American Progress, June 13, 2018. Brad Plumer and Coral Davenport, "Science Under Attack: How Trump is Sidelining Researchers and Their Work," *New York Times*, June 13, 2018.

[3] See Jones and Hilbers (2004)

[4] Interview by the authors of a senior official at an environmental IO (January 25, 2021).

inconvenient. Further, unlike many other kinds of information, scientific information is useful to hide because it can be tough to uncover otherwise. While many kinds of information can instead be gleaned from alternative sources, scientific information is technically complex and therefore difficult for the public to evaluate and independently verify (e.g., Huber, Fesenfeld, and Bernauer 2020).

However, we argue that not all leaders have strong abilities or incentives to hide this information. Instead, we theorize that populist leaders both benefit most and are penalized least from suppressing or distorting scientific information because this data is uniquely "elitist" — it is generated and analyzed by academics, scientists, and other putatively elite actors. A defining and well-documented characteristic of populism is anti-elitism, as populist politicians extol the virtues of the "pure people" while discrediting so-called globalists and career bureaucrats (Mudde and Rovira Kaltwasser 2018; Busby, Gubler, and Hawkins 2019). Withholding or altering these data can reinforce populists' anti-elite bona fides, allowing them to align themselves with the mass non-elite public. Thus, while a large literature suggests that voters and firms should advocate for government transparency to improve government responsiveness and ease investment (Stiglitz 1998; Besley and Burgess 2002; Malesky, Gueorguiev, and Jensen 2015), we expect that this logic does not extend to populists' constituents.[5] Populists may therefore seek to gut agencies devoted to scientific research that would otherwise be provided to IOs, inject bias or misinformation into reports, or refuse to disclose information to IOs altogether.

To test our theory, we use original, hand-coded data on the source of IOs' information – whether it is provided directly by members states or estimated by other actors – as well as a new measure of IO data quality. We find that populists provide significantly less scientific information to IOs, and that when they do provide it, it is of lower quality than information provided by other leaders. Moreover, this pattern does not hold for other kinds of information.[6] We supplement these

[5]The media frequently documents government attempts to withhold or distort scientific information, allowing the public to observe such behavior. See e.g. Milman, Oliver and Morris, Sam. "Trump is Deleting Climate Change, One Site at a Time." *The Guardian*. May 14, 2017; Stolberg, Sheryl Gay. "Trump Administration Strips C.D.C. of Control of Coronavirus Data." *The New York Times*. July 14, 2020.

[6]We follow Hollyer, Vreeland, and Rosendorff (HRV) in measuring missingness in countries' World Development Indicator reports. See Hollyer, Rosendorff, and Vreeland (2011*b*,*a*, 2018, 2019).

tests with interviews conducted with senior officials at leading health, environment, and energy IOs that play key data collection and dissemination roles. We also test our mechanism, finding that this relationship holds only for government-supplied scientific indicators as opposed to information estimated by non-governmental sources.

In doing so, we advance scholarship on the conditions under which IOs can promote international cooperation by highlighting information suppression as an under-appreciated means through which states can undermine IOs.[7] Moreover, by identifying populists as key actors who use this tool, our findings point to the specific periods and leaders under which global governance may break down, and further the body of work analyzing the international effects of these types of leaders (Copelovitch and Pevehouse 2019; Frieden 2021; Mudde and Rovira Kaltwasser 2018; Heinrich, Kobayashi, and Lawson 2019; Voeten 2020). In developing the theory, we also identify the precise kinds of information that are likely to be affected by populist leaders, which carries implications for how power is exercised in the international system and points to ways in which global governance could potentially be designed to work more effectively in the face of threats such as climate change and public health crises.

## Populism, IOs, and Transparency

Since Keohane (1984), scholars have recognized that a key function of IOs is to disseminate information to the international community. This information pertains to a wide range of activities including the economic health of member states and the international system, compliance with international laws and rules, trade patterns, security conditions, and more. In doing so, IOs can allow members to make more informed decisions and thereby promote cooperative outcomes. In many cases, information collection and provision is central to IOs' formal mandates.[8]

However, supplying this information broadly often requires data and documentation about individual member states. For example, for the WHO to coordinate a global response to a disease

[7]For more on this and other ways in which states do so, see Carson (2020); Gray (2018); von Borzyskowski and Vabulas (2018); Pratt (2020).

[8]Interviews performed by authors with a senior official at a prominent health IO (January 22, 2021) and senior officials at two leading environmental and energy IOs (January 25, 2021 and February 2, 2021).

outbreak, it must gather information regarding disease origins and incidence among members. For the International Monetary Fund (IMF) to determine systemic risks and forecast global economic conditions, it relies on economic data about a variety of countries. For the International Atomic Energy Agency (IAEA) to ascertain whether members are adhering to the international rules governing nuclear development, it must acquire information regarding countries' nuclear programs.

IOs sometimes gather required information on their own using a variety of surveillance technologies, open source information, and on-the-ground inspections. For instance, the IAEA sends inspectors to monitor its members and their nuclear facilities (Thorne 1992); UN peacekeepers obtain intelligence on the ground and from drones and other methods (Dorn 2009); and the European Commission sends election monitors to collect information about whether elections are free and fair (Kelley 2009). However, IOs typically cannot procure all of the information they need independently, as member states are often loath to provide them with these capabilities.[9] Members often worry that doing so will provide IOs with too much power, rendering them unaccountable and giving up their own sovereignty. States may also express concern that such IOs will use their increased capacities to expand their missions or pursue their own bureaucratic objectives (Barnett and Finnemore 1999). Moreover, open source information may not be available or seen as reliable by IOs.

Accordingly, IOs often rely on information provided directly by member states, which may pertain to their own activities or those of other states. This information could include economic data such as bank reserves, gross domestic product, and other figures – particularly in closed regimes where leaders seek to control it (Egorov, Guriev, and Sonin 2009; Gehlbach and Sonin 2014; Lorentzen 2014) – or intelligence-based information like another state's compliance with international laws and norms.[10] States may also provide information on their own behavior or that of their firms, as in the domains of trade and investment.[11]

Yet an emerging body of scholarship recognizes that sharing information with IOs is

[9] See Pollack (1997); Abbott and Snidal (1998) on these principal-agent dynamics.

[10] See, e.g., Hafner-Burton (2008) on naming and shaming in human rights enforcement.

[11] Also see the Paris Agreement and UN Framework Convention on Climate Change examples of self-reporting on compliance with international agreements.

governed at least in part by leaders' self-interest. Leaders tend to provide information if it benefits themselves or their allies and withhold it otherwise (Dai 2002; Terman and Voeten 2018). For example, Hollyer, Rosendorff, and Vreeland (2011*a*) argue that democratic leaders face unique electoral incentives to ensure information transparency, while other scholars instead contend that democratic leaders are prone to conceal information they believe the public will view unfavorably (O'Rourke 2018; Kono 2006; Reiter 2012; Rejali 2009; Schuessler 2010).

Even within democracies, however, leaders vary widely in their interest in reporting data to IOs.[12] While not disputing these studies' findings, we argue that an important source of variation in whether information is ultimately shared with IOs is whether a given leader is a populist. In particular, we anticipate that populist leaders are especially disposed to restrict information collection and dissemination from IOs. Populists are characterized by adherence to a system of beliefs that privilege "the pure people" over the "corrupt elite" (Mudde and Rovira Kaltwasser 2018; Pevehouse 2020). Populist rhetoric often attributes blame for negative outcomes to political insiders who knowingly abuse the system for personal gain (Busby, Gubler, and Hawkins 2019), and often seek to portray IO bureaucrats as members of a corrupt global elite who are not to be trusted (Mudde and Kaltwasser 2017).

Portraying elites in this manner is often popular with populists' constituencies, which allows them to withhold or distort information that comes from such elites. Since the public is unlikely to believe information from these sources, they do not tend to withdraw their support in the face of such behavior. Instead, omitted or false information can *boost* support for populists (Castanho Silva, Vegetti, and Littvay 2017; van Kessel, Sajuria, and Van Hauwaert 2020), in part because those who favor populists also tend to be susceptible to conspiracy theories and other kinds of falsehoods (Oliver and Rahn 2016; Norris, Cameron, and Wynter 2018). Since people who hold these beliefs support populists, populists anticipate this and thus turn to them frequently.

Holding information back from IOs further accords with populists' preferences for state sovereignty and their general dislike of international interference in national affairs (Copelovitch

[12]Elite political strategies may cancel out the cooperative dispositions traditionally ascribed to democracies (e.g., Zucker 2020).

and Pevehouse 2019). These concerns are apparent for right- and left-wing populists. For nativists — right-wing populists focused on their own countries' gains relative to those of other countries (Copelovitch and Pevehouse 2019) — limiting information provided to an IO can also serve as a means of disadvantaging other member states, transforming information into a strategic weapon to be withheld from others to boost national strength. Indeed, scholars have shown that right-wing constituencies are high in dominance values that privilege the national in-group over international out-groups.[13] Redistributionists — the left-wing branch of populists — may also suppress information provided to IOs, believing that it infringes on state sovereignty or advantages an international elite at the expense of the general public (Copelovitch and Pevehouse 2019). Both branches thus may profit from withholding information because doing so can weaken IOs, thereby benefitting the common people, increasing populist leaders' influence, and providing them with more policy options.

Populist leaders can stop providing accurate information to IOs in several ways. They might suppress the release of information that the public does not know that they possess, or cease ongoing collection efforts. This is often achieved by defunding or otherwise undermining domestic agencies that pursue data collection, which would then otherwise be shared with an IO. Alternatively, they may continue to provide information to IOs but do so in a misleading or incorrect way. They may lie or supply certain pieces of information that paint a distorted picture of reality, often by appointing supporters to bureaucratic posts and trusting them to supply information in a politically advantageous manner (Busby, Gubler, and Hawkins 2019) (Oliver and Wood 2014). Moreover, populists may engineer new "alternative" sources of information and accordingly sow doubt over which sources are most trustworthy (Oreskes and Conway 2011). In cases where the accuracy of the data is questioned, IOs may flag or omit the reported data, so that it appears as missing.[14]

Such information suppression strategies are often preferable to other forms of intransigence such as exiting an institution, refusing to attend meetings, or creating competitor organi-

[13] See Rathbun (2007); Schwartz (2012); Brutger and Rathbun (2020).

[14] Interview conducted by the authors of a senior official at an environmental and energy IO. January 25, 2021.

zations[15] since it can be difficult for the international community to interpret whether and which statistics have been withheld or distorted and in what ways. Populists thus might use this strategy to escape scrutiny from other member states or non-governmental actors. Or, they may choose to adopt several methods of undermining IOs concomitantly, such as suppressing information while boycotting meetings and refusing to confirm nominees to key posts.

## The Importance of Scientific Information

While populists may be inclined to withhold many kinds of information from international organizations, we argue that they are especially likely to do so for a certain type of information – namely *scientific information*. For the purposes of our analysis, scientific information is defined as information pertaining to issues of public health and the environment in which scientists play a prominent role in data collection and analysis. We claim that populists face strong incentives to distort this kind of information and face few costs from voters or industry when they do so.

Restricting scientific information often allows populists to achieve political goals by covering up mismanagement or other politically inconvenient data and details. For example, negative health information may indicate mismanagement and generate economic consequences for states and industries. A senior official at a prominent health IO indicated that countries perceive some health data "to be highly sensitive," leading countries to try to "manipulate the statistics in ways that would be favorable to them." For instance, when reporting on the HIV/AIDS epidemic, "some wanted AIDS estimates to be high to attract development aid [...] other countries wanted estimates to be low because it might negatively affect tourism."[16] Relatedly, many leaders wanted to suppress statistics from the WHO related to coronavirus spread due to fears of inciting travel bans, trade restrictions, and other negative economic and political effects (Worsnop 2019).

Similar concerns pertain to data and documentation regarding the environment. Leaders often do not want to be found non-compliant with agreements and industries may want to avoid pressure to change their behavior. For example, a senior official at an environmental and energy IO

[15] See von Borzyskowski and Vabulas (2018); Gray (2020); **?** respectively.

[16] Interview conducted by the authors of a senior official at a public health IO. January 22, 2021.

noted "the political importance of the data points" surrounding pesticide use because "countries do not want to be told to reduce their activities."[17] For similar reasons, the official pointed to "a high potential of strategic non-disclosure for emissions and climate-relevant statistics."[18]

Populists find it possible to restrict scientific information, unlike other types of documentation, because it often cannot be gleaned from other sources. Scientific information is frequently costly to produce, requiring the employment of scientists and other highly trained individuals, large research budgets, and time to collect it. When IOs cannot access this data from members, they may not have the resources or expertise to obtain it themselves or to procure it from other sources.

Further, populists can avoid domestic repercussions from withholding or distorting scientific information due to its uniquely "elitist" character. These data are often produced or endorsed by academics and other types of elite actors, who are discredited by populist leaders. Voters frequently have difficulty interpreting and independently verifying scientific information themselves, and thus may simply take populists' word that they should trust the populist leader's assertions. While the public may be able to detect distortions in economic statistics like the unemployment rate by observing the employment situation in their local community or social network (Alt et al. 2020; Zucker 2021), they are typically unable to do so with respect to greenhouse gas emissions or disease prevalence. Data from these areas are often highly technical or so complex that only trained specialists can fully understand them, and involve substantial uncertainty. Evidence typically does not conclusively prove hypotheses, estimates come with confidence intervals, previous findings are often overturned by new ones, and doubt may exist over the populations or regions to which a given study applies. It is thus particularly easy for populists to distort these findings. Even if the undistorted scientific findings are revealed eventually, populists may sow enough confusion and mistrust in the meantime that they will not be believed or understood by a large swath of the population (Ferraz and Finan 2008; Arias et al. 2019).[19]

[17] Interview conducted by the authors of a senior official at an environmental and energy IO. January 25, 2021.

[18] Interview conducted by the authors of a senior official at an environmental and energy IO. January 25, 2021.

[19] As Huber, Fesenfeld, and Bernauer (2020, p. 376) note on the issue of climate change, for instance, "its elite-driven and technical character" make it particularly susceptible to "populist (re)framing." For instance, a leader of the Dutch Party for Freedom claimed in the wake of the Paris Agreement that "the elite are laughing here while rubbing their hands" (Schaller and Carius 2019, p. 91); similarly, Jean-Marie Le Pen, the founder of France's National

Populists not only face little resistance to scientific information suppression from the public, but also from lobbyists. While investors and industry groups often push for greater clarity with regard to economic conditions and legal environments to attract foreign investment (Malesky, Gueorguiev, and Jensen 2015; Wang 2015), root out corruption (Stiglitz 1998) or manage inflation (Dincer and Eichengreen 2007), few lobbies face incentives to mobilize for scientific transparency. These data may be seen as less relevant to business operations than traditional indicators of investment conditions, and industries may stand to benefit from the active manipulation of certain scientific data points. While prior work illustrates how government opacity can generate domestic resistance by undermining public and corporate welfare (Besley and Burgess 2002; Hollyer, Rosendorff, and Vreeland 2018), the pro-transparency constituency for scientific data is thus often weak.

## Empirics

The preceding discussion suggests that populists are particularly prone to withhold scientific information from international organizations. To test this hypothesis, we examine whether scientific data that should be provided to IOs is more likely to be missing when a populist is in power. As a placebo test, we evaluate whether this expectation holds for non-scientific data. In additional analyses, we evaluate how missingness varies according to whether data was supplied directly by states, and whether populism is associated with erosions in data quality as well.

To measure countries' non-reporting of scientific data, we follow Hollyer, Rosendorff, and Vreeland (2011*a*) and calculate the rate of missingness in countries' World Development Indicator (WDI) data. As governments are typically the initial providers of these data, higher levels of missingness signal a greater unwillingness to furnish information to IOs. In a subsequent test, we also utilize an original dataset to analyze rates of missingness across WDI data that governments provide directly to the World Bank and data acquired from non-governmental institutions.

Our primary dependent variable captures the share of scientific variables in the WDI

Front party, decried environmentalism as the "new religion of the [bourgeois]." Hugo Domenach, "Écologie: les contradictions de Marine Le Pen," *Le Point*, March 15, 2019.

database recorded as missing for a given country in a given year. To construct this variable, we extract the list of WDI indicators that fall into two categories — energy and the environment or public health — and calculate the share that is missing for each country-year.[20] In total, we include 252 WDI variables in our calculations; approximate categorizations of these variables are presented in Table 1.[21] This outcome variable is calculated for the years 1990 to 2018, the entire period for which comprehensive data on populism are available.

| Category | Subcategory | Quantity | Example Indicator |
|---|---|---|---|
| Environment | Emissions | 26 | CO2 emissions from liquid fuel consumption (kt) |
| | Land | 26 | Arable land (% of land area) |
| | Water | 20 | Marine protected areas (% of territorial waters) |
| | Energy | 30 | Energy use (kg of oil equivalent per capita) |
| Health | Disease | 18 | Incidence of malaria (per 1,000 pop at risk) |
| | Mortality | 39 | Mortality rate, adult, male (per 1,000 male adults) |
| | Nutrition | 28 | Low-birthweight babies (% of births) |
| | Hygiene | 12 | People using safely managed sanitation services (% of pop) |
| | Access to care | 34 | Antiretroviral therapy coverage (% people with HIV) |
| | Sex & reproduction | 19 | Fertility rate, total (births per woman) |

**Table 1:** Categories of Scientific WDI Variables. We include 252 variables in total in our calculation of missingness in reporting across scientific measures.

To measure populism, we draw on data from the Tony Blair Institute for Global Change. This dataset analyzes the contents of thousands of academic articles published in 66 leading political science, sociology, and regional studies journals to code whether a given country's leader is a populist. The Institute "identified all articles published in these journals on the subject of populism, as well as political leaders linked with populism; then vetted each potential case study, consulting with country and regional experts."[22] To ensure that this measure is robust, we compare it with a second populism measure contained within the Global Populism Database, which utilizes speeches from leaders to assign them a populism score varying from zero (no populism) to two

[20] Hollyer, Rosendorff, and Vreeland (2011*a*,*b*, 2018, 2019). We calculate this measure ourselves rather than utilize their replication files to maximize temporal coverage. Our reconstructed transparency measure runs through 2018.

[21] In identifying the scientific variables, we are careful to eliminate derivatives of the same data point. For example, the WDI dataset includes kilotons of $CO_2$ emissions for each country-year, along with CO2 emissions in proportion to various measures of GDP; we include only the indicator of kilotons of $CO_2$ emissions. We similarly eliminate duplicate variables in our analyses of non-scientific variables.

[22] They define populists as leaders who share two core ideologies: (1) elites or "outsiders" threaten the interests of the "true people," and (2) populists stand for the "true people."

(complete populist antagonism).[23] We opt for the Blair Institute measure because it offers superior temporal and spatial coverage. However, we confirm that all relevant instances of populism in the Blair Institute data are likewise coded as populist in the Global Populism Database.[24]

We include additional covariates in the fully specified models. We control for a country's level of democracy using Polity2 scores in all models, as scholars have demonstrated a strong link between democracy and transparency (e.g., Hollyer, Rosendorff, and Vreeland 2011*a*). In our fully specified models, we include a binary variable indicating whether a given country's leader has a right-wing ideology, drawing on the Database of Political Institutions; this helps to account for potential differences between right- and left-wing populists (cf. Copelovitch and Pevehouse 2019). We further control for GDP per capita, which provides an approximate measure of a country's state capacity and technical ability to collect and disseminate data, as well as a country's participation in ongoing IMF programs, as the IMF often mandates greater transparency as well as improvements to reporting and data collection agencies. All models additionally include country and year fixed effects to account for other country- and time-specific factors. Robust standard errors are clustered at the country level. All independent variables are lagged by one year. Summary statistics are shown in appendix A.

Our primary model takes the form

$$\text{Rate of missingness}_{ct} = \beta\, \text{Populist}_{c(t-1)} + \gamma\, \mathbf{X}_{c(t-1)} + \delta_c + \zeta_t + \epsilon_{ct}$$

where $\text{Populist}_{c(t-1)}$ is the binary populism indicator at the country-year level, $\mathbf{X}_{c(t-1)}$ is a vector of country-year-level covariates, $\delta_c$ and $\zeta_t$ are country and year fixed effects terms, and $\epsilon_{ct}$ is an error term clustered at the country level.

Our topline results are presented in Table 2. The dependent variable is missingness in scientific indicators. Column 1 includes the Blair Institute populism measure alongside Polity2

[23] Hawkins, Kirk A.; Aguilar, Rosario; Castanho Silva, Bruno; Jenne, Erin K.; Kocijan, Bojana; Rovira Kaltwasser, Cristobal. 2019. "Global Populism Database, V1." Harvard Dataverse.

[24] We consider a country to be led by a populist if the populism score is above 0.4 (at least somewhat populist) and if the populism binary from the Tony Blair Institute is equal to 1 in a given year.

democracy scores alone since democracy is the leading driver of transparency posited in existing work. We introduce the additional covariates discussed above in Column 2. The results accord with our theoretical expectations. Populism achieves statistical significance in the anticipated direction regardless of the model specification when we focus on missingness in scientific variables. Moreover, the core result from Hollyer, Rosendorff, and Vreeland (2011*a*) replicates — as countries become more democratic, they have less missingness in the WDI. This increases confidence in the validity of our results. Notably, the magnitude is somewhat smaller for democracy than that for populism in these models. A one-point increase in a country's Polity2 score is associated with decline in suppression of roughly 1% of a standard deviation. In contrast, when a populist assumes office in a given country, levels of suppression increase by approximately 5–6% of a standard deviation; roughly the equivalent of a 4–6 point decline in a country's Polity score.

| | *Dependent variable:* | |
|---|---|---|
| | Scientific missingness | |
| | (1) | (2) |
| Populism | 0.047** | 0.060** |
| | (0.019) | (0.027) |
| Polity2 | −0.012*** | −0.010*** |
| | (0.002) | (0.003) |
| Right-wing | | 0.008 |
| | | (0.010) |
| GDP per capita (ln) | | −0.004 |
| | | (0.049) |
| IMF program | | 0.033** |
| | | (0.014) |
| Observations | 4,614 | 2,277 |
| Adjusted $R^2$ | 0.928 | 0.866 |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 | |

**Table 2:** Regressions of the proportion of scienftific WDI indicators missing in a given year (standardized) on the Blair Institute populism indicator. All models include country and year fixed effects and standard errors clustered by country. Independent variables are lagged by one year.

Next, as a placebo test, we replicate the above regressions with a dependent variable capturing missingness in non-scientific indicators. Examples of non-scientific indicators found in the WDI include economic data on GDP and household savings rates, as well as data concerning an array of other issues such as crime. We anticipate no relationship between populism and missingness

for these data given the theorized distinctiveness of scientific information. In line with our theoretical expectations, we identify no significant relationship between populism and non-reporting of non-scientific data, though the statistically significant result for democracy remains (Table 3).

| | *Dependent variable:* | |
|---|---|---|
| | Non-scientific missingness | |
| | (1) | (2) |
| Populism | −0.018 | −0.006 |
| | (0.027) | (0.024) |
| Polity2 | −0.010*** | −0.007* |
| | (0.003) | (0.003) |
| Right-wing | | 0.025* |
| | | (0.015) |
| GDP per capita (ln) | | −0.001 |
| | | (0.086) |
| IMF program | | −0.001 |
| | | (0.015) |
| Observations | 4,614 | 2,277 |
| Adjusted $R^2$ | 0.924 | 0.931 |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 | |

**Table 3:** Regressions of the proportion of non-scientific WDI indicators missing in a given year (standardized) on the Blair Institute populism indicator. All models include country and year fixed effects and standard errors clustered by country. Independent variables are lagged by one year.

To further probe how populism affects states' willingness to disclose information to IOs, we analyze original data on the provenance of each scientific variable contained within the WDI. While some indicators are calculated from information shared directly by member states with the World Bank, many of the variables instead come from other international organizations, non-governmental organizations, or academic institutions, which themselves may not be wholly reliant on state-provided data.[25] A significant number of IOs, recognizing issues of non-reporting by national governments, rely on estimation and imputation methodologies to resolve missingness in their datasets. The Food and Agricultural Organization, for example, imputes much of its data, in some cases simply filling in missing data points with the last available observation. Other IOs and data providers, by contrast, principally rely on and report unmodified data furnished by member states. The Joint UN Programme on HIV and AIDS, for instance, does not estimate missing data

[25] See, e.g., Clark (2021) on information sharing between IOs.

on HIV/AIDS prevalence at the country level.

These data are hand-coded from the WDI's metadata; further details on coding procedures can be found in appendix B. In cases where other IOs provide WDI data, we analyze those IOs' current data collection methodologies. For each scientific variable under consideration, we identify whether the data presented in the WDI is raw, state-provided data or data that has been estimated or imputed by a collecting IO or other information provider. Of the scientific variables in our data, we identify 48.7% of them as relying on unmodified data provided directly by states. The remaining 51.3% of variables involve estimation or imputation by a non-state or intergovernmental data provider.

If the non-reporting we previously identify is principally owed to strategic behavior on the part of populist governments, we should observe stronger results for raw, state-provided data than data estimated or otherwise modified by other actors. To evaluate this, we conduct another pair of tests disaggregating WDI variables by source. Model specifications remain the same as before.

| | *Dependent variable:* | | | |
|---|---|---|---|---|
| | Raw state-reported | | Estimated or imputed | |
| | (1) | (2) | (3) | (4) |
| Populism | 0.052*** | 0.033** | 0.013 | 0.053 |
| | (0.015) | (0.015) | (0.026) | (0.034) |
| Polity2 | −0.008*** | −0.003 | −0.010*** | −0.010*** |
| | (0.002) | (0.002) | (0.002) | (0.003) |
| Right-wing | | 0.003 | | 0.013 |
| | | (0.008) | | (0.016) |
| GDP per capita (ln) | | 0.001 | | −0.007 |
| | | (0.041) | | (0.062) |
| IMF program | | 0.019** | | 0.039** |
| | | (0.010) | | (0.017) |
| Observations | 4,614 | 2,277 | 4,614 | 2,277 |
| Adjusted $R^2$ | 0.964 | 0.975 | 0.897 | 0.651 |
| *Note:* | | | | *p<0.1; **p<0.05; ***p<0.01 |

**Table 4:** Regressions of the proportion of WDI indicators missing in a given year by source on a populism indicator based on the Blair Institute populism indicator. All models include country and year fixed effects and standard errors clustered by country. Independent variables are lagged by one year.

The results of these tests are listed in Table 4. The strongest results, both in terms of

magnitude and statistical significance, are for the variables reliant on raw, state-provided data. The entry into office of a populist government in associated with an increase in missingness of 3–5% of a standard deviation in variables using raw state data. We observe no significant relationship between populism and variables that are estimated or imputed by non-state information providers.

For both sets of our core tests, we perform several additional robustness checks to increase confidence in our results. First, we drop outliers from the dependent variable by excluding all observations with outcomes further than two standard deviations from the mean, and results are robust (appendix C). In additional tests, we drop the United States from our sample to ensure that the Trump years, in which the U.S. dramatically reduced its information provision to IOs, are not driving our results (appendix D). We eliminate data after 2015, as there is often a lag of a few years in the reporting of key variables as information providers collect, aggregate, and analyze relevant inputs. Results hold for the state-provided data (appendix E). Our results are furthermore robust to inclusion of additional covariates intended to capture the size of a country's fossil fuel and agricultural industries, as well as its reliance on international development assistance (appendix F).

Finally, we analyze whether populism affects the *quality* or accuracy of data reported, as opposed to simply the outright missingness of data. Our theory implies that populists may also manipulate data provided to IOs short of entirely withholding data. This tactic may, for example, be particularly pronounced when non-reporting risks substantial international sanction; it may also be a byproduct of the hollowing out of state institutions under certain populists. To test this, we focus on data on greenhouse gas emissions, which are the subject of significant international governance but also potentially prone to tampering by state governments.

To measure the quality of state-provided emissions data, we compute the absolute difference between emissions data that states report directly to the UN Framework Convention on Climate Change (UNFCCC) and the emissions data contained within the WDI, which is gathered from the Emissions Database for Global Atmospheric Research (EDGAR) and reliant on data provided by the IEA and FAO. We focus specifically on Annex I Parties to the UNFCCC, which encompasses OECD countries and post-Soviet countries, and are subject to more stringent report-

ing requirements than developing countries; this accordingly may be a likely case for populists substituting manipulation for non-reporting. While we do not expect EDGAR estimates to be perfect descriptions of "true" emissions levels, we assume that the accuracy of these estimates will not vary with the entry of populists into office.

We regress the natural logarithm of the gap in emissions data on the populism indicator and our primary set of covariates. We include two additional covariates capturing the size of a country's fossil fuel and agricultural industries, intended to measure the domestic pressure governments may feel to manipulate emissions reports. Remaining specifications, including the country and year fixed effects, remain the same.

| | *Dependent variable:* |
|---|---|
| | Emissions data gap (ln) |
| Populism | 0.307** |
| | (0.134) |
| Polity2 | 0.012 |
| | (0.025) |
| Right-wing | 0.116 |
| | (0.138) |
| GDP per capita (ln) | −0.160 |
| | (0.375) |
| IMF program | −0.031 |
| | (0.125) |
| Fossil fuel (% energy consumption) | 0.033** |
| | (0.016) |
| Value added by agriculture, forestry, and fishing (% GDP) | 0.031 |
| | (0.032) |
| Observations | 790 |
| Adjusted $R^2$ | 0.845 |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 |

**Table 5:** Regressions of the absolute difference (ln) between the total emissions estimate provided by Annex I Parties to the UNFCCC in a given year and the total emissions figure estimated by EDGAR (as reported in the WDI) in a given year on a populism indicator based on the Blair Institute populism indicator. All models include country and year fixed effects and standard errors clustered by country. Independent variables are lagged by one year.

As Table 5 indicates, populism is associated with substantively and statistically significant erosion in the quality of state-reported emissions data. The accession of a populist government is associated with a 36% increase in the gap between state-reported UNFCCC data and externally estimated EDGAR data, providing strong evidence that short of withholding data, populists may

opt to manipulate data they are required to provide to IOs. We find that these results are robust to a number of alternate specifications, reported in appendices C–E.

## Conclusion

We offer a new account of barriers to effective international cooperation hinging on the domestic political strategies of member state elites. We identify populist movements within countries as a significant impediment to IOs' functions as repositories and providers of scientific data. While populists are often skeptical of global governance arrangements generally, we argue that populists should be particularly prone to withhold scientific information. The elite character of scientific information provides populists with the political incentive to suppress or manipulate it. The lack of domestic constituencies lobbying for scientific transparency gives populists the leeway needed to tamper with these data without fear of costly political repercussions.

In analyses of data provided to the World Bank, we find that populist governments are significantly less likely to report on scientific indicators than other governments. Notably, we find no substantial difference between populists and non-populists for other classes of information. We show that this result principally holds for indicators reliant on data provided directly by member states, not for indicators using data that is actively estimated or imputed by non-state information providers. By comparing state-reported and third party-estimated greenhouse gas emissions data, we additionally uncover evidence that populists undermine the accuracy of information provided to IOs. We supplement these empirical findings with evidence from semi-structured interviews conducted with leading officials at prominent environmental and health IOs that serve important data collection and dissemination functions.

This paper makes several scholarly contributions. First, while existing work focuses on how states undercut IOs by reducing their participation in or exiting from these organizations,[26] we shift the focus to the essential role of information provision. Concerns about data quality stemming from member state information withholding are particularly salient in the midst of the COVID-19 pandemic, as states such as the U.S. and China have been resistant to transmit details to IOs like the

[26] See Gray (2018); von Borzyskowski and Vabulas (2018) respectively.

WHO. These insights have applications to the study of power in global governance more generally, as we highlight the supply of information as an under-appreciated source of influence.

Second, we build on existing work interested in government transparency broadly and the transmission of information to IOs in particular. While scholars have pointed to factors like democracy and state capacity as sources of government transparency,[27] we hone in on populism as an important predictor of governments' information disclosures. IOs have proliferated in the post-war years, yet have recently faced sustained pressure and criticism, in part for their perceived secretive nature. We suggest that it may be difficult for IOs to open up if their member governments are reticent to do so under populism.

Third, we extend the literature that examines how and when IOs can solve cooperation problems and promote cooperative outcomes that benefit their member states.[28] While a large body of work explores how these organizations solve certain cooperation problems related to issues like time inconsistency and political holdup, we show how populists might undercut an IO's ability to facilitate cooperation by refusing to provide crucial data. Then again, if IOs are viewed in a more critical light, efforts to hobble them could be welcomed (Colgan and Keohane 2017).

Our theory and findings are likely highly generalizable. While we focus on health and environmental indicators as prototypical cases of scientific information found in development statistics, scholars may also productively examine scientific data extending beyond these areas, such as data on nuclear capacity collected by the IAEA, which is similarly viewed as "elitist."[29] We also expect our theory to travel to other IOs, though these effects are likely most pronounced the less IOs are able to acquire or estimate missing data by other means. Put differently, the more IOs rely on member states for scientific information, the more populists can control IOs' access to it.

Our study also suggests a number of other directions for future work. We show the importance of disaggregating information, as disclosures of different types of information — such as that pertaining to sensitive topics like health or the environment — may be governed by distinct

[27] See, e.g., Hollyer, Rosendorff, and Vreeland (2011*a*).

[28] See Keohane (1984); Carnegie (2015).

[29] For instance, the Trump administration withheld data related to the size of the U.S. nuclear weapons stockpile. See `https://fas.org/blogs/security/2020/12/nuclear-stockpile-denial-2020/`.

political logics. Moreover, information may be provided by member states or derived from other sources like NGOs. While we focus on the impact of populism on the release of certain types of information, future work might disaggregate information as it relates to other aspects of governance. Additionally, scholars might examine how the perceived sensitivity of various types of information has changed over space and time and how this feeds into outcomes like information disclosure. Or, future research might examine whether IOs act strategically to avoid a reliance on populists or other actors that are particularly resistant to share information; our original data on the sources of WDI variables might be helpful in this regard. Most broadly, our work suggests that future scholarship should take populism into account when theorizing about information and transparency generally speaking.

Our findings also have policy implications. In suggesting when IOs are more or less likely to effectively carry out their mandates, we point to potential ways in which policymakers may strengthen cooperative efforts. For example, if policymakers wish to better insulate IOs from the effects of populism, they may improve IOs' abilities to gather their own information whether through diversifying their sources of data and documentation, expanding access to open source or other information, or equipping them with more sophisticated tools. Moreover, if policymakers seek to expand IOs' writ, our study suggests the most productive times to do so may be when populism is not prevalent among members. Finally, our study points to the conditions under which IOs' data can be trusted; since populists often provide lower quality data, experts and policymakers may wish to take caution when relying on data provided by these actors.

Finally, our study has implications for some of the arguably most pressing problems of our time, including environmental and health questions, as their effective mitigation may require global responses. Yet these are the very issues that populists are most reticent to disclose information about, hobbling international efforts to address them. Climate change, public health emergencies, and other disasters may thus loom large under populist leaders, with potentially severe consequences for the international community.

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# Online Appendices

**A Summary Statistics** **A2**

**B Coding Procedures** **A3**

**C Drop Outliers** **A4**

**D Drop United States** **A5**

**E Drop Most Recent Years** **A6**

**F Additional Covariates** **A7**

# A Summary Statistics

| Statistic | N | Mean | St. Dev. | Min | Pctl(25) | Pctl(75) | Max |
|---|---|---|---|---|---|---|---|
| Scientific missingness | 7,656 | 0.617 | 0.157 | 0.187 | 0.508 | 0.683 | 1.000 |
| Non-scientific missingness | 7,656 | 0.555 | 0.195 | 0.138 | 0.414 | 0.660 | 1.000 |
| Scientific missigness (raw) | 7,656 | 0.610 | 0.204 | 0.127 | 0.436 | 0.745 | 1.000 |
| Scientific missingness (estimated) | 7,656 | 0.557 | 0.155 | 0.137 | 0.470 | 0.581 | 1.000 |
| Populism | 7,656 | 0.045 | 0.206 | 0 | 0 | 0 | 1 |
| Polity2 | 4,614 | 3.039 | 6.632 | −10.000 | −3.000 | 9.000 | 10.000 |
| Right-wing | 2,593 | 0.368 | 0.482 | 0.000 | 0.000 | 1.000 | 1.000 |
| GDP per capita | 6,830 | 12,406.880 | 19,057.410 | 161.834 | 1,379.505 | 13,943.140 | 191,586.600 |
| IMF program | 7,656 | 0.184 | 0.387 | 0 | 0 | 0 | 1 |

**Table A6:** Summary statistics for main regression models. Note that no transformations (e.g., standardization, natural log) have been applied to these variables.

## B Coding Procedures

To identify the source of WDI variables, we first examined the metadata for each variable under consideration. If the data was provided by a non-governmental organization, another international organization, or an academic source, we next examined that source's website for additional information about the original source of the data in question. We then placed each variable into one of two categories. The first, which we believe should be most affected by populism, is raw state-provided data. This category consists of variables that are of state-reported origin – this includes data either provided directly by the state to the World Bank or data provided by states to a non-governmental entity that is subsequently relayed to the World Bank. The second, which we do not believe should be impacted by populism, includes data that is either independently collected or estimated/imputed by non-governmental organizations, academics, or international organizations. Around half of the WDI variables fall into each category.

# C Drop Outliers

| | *Dependent variable:* | | |
|---|---|---|---|
| | Scientific missingness (all) | Scientific missingness (raw state) | Scientific missingness (estimated) |
| | (1) | (2) | (3) |
| Populism | $0.066^{***}$ | $0.033^{**}$ | $0.061^{*}$ |
| | (0.025) | (0.016) | (0.032) |
| Polity2 | $-0.010^{***}$ | $-0.003$ | $-0.010^{***}$ |
| | (0.003) | (0.002) | (0.004) |
| Right-wing | 0.009 | 0.004 | 0.013 |
| | (0.009) | (0.007) | (0.016) |
| GDP per capita (ln) | $-0.001$ | 0.001 | 0.001 |
| | (0.048) | (0.042) | (0.061) |
| IMF program | $0.032^{**}$ | $0.019^{**}$ | $0.036^{**}$ |
| | (0.013) | (0.009) | (0.017) |
| Observations | 2,251 | 2,251 | 2,251 |
| *Note:* | | | $^{*}$p<0.1; $^{**}$p<0.05; $^{***}$p<0.01 |

**Table C7:** Regressions of the proportion of scientific WDI indicators missing in a given year on the populism indicator. Includes country and year fixed effects. Outliers are classified as observations with the outcome measure more than two standard deviations from the mean.

| | *Dependent variable:* |
|---|---|
| | Emissions data gap (ln) |
| Populism | $0.305^{*}$ |
| | (0.156) |
| Polity2 | 0.004 |
| | (0.026) |
| Right-wing | 0.098 |
| | (0.119) |
| GDP per capita (ln) | $-0.058$ |
| | (0.363) |
| IMF program | $-0.052$ |
| | (0.138) |
| Fossil fuel (% energy consumption) | $0.023^{*}$ |
| | (0.012) |
| Value added by agriculture, forestry, and fishing (% GDP) | 0.039 |
| | (0.032) |
| *Note:* | $^{*}$p<0.1; $^{**}$p<0.05; $^{***}$p<0.01 |

**Table C8:** Regressions of the proportion of WDI indicators missing in a given year by source on a populism indicator based on the Blair Institute populism indicator. Includes country and year fixed effects. Outliers are classified as observations with the outcome measure more than two standard deviations from the mean.

# D Drop United States

| | *Dependent variable:* | | |
|---|---|---|---|
| | Scientific missingness (all) | Scientific missingness (raw) | Scientific missingness (estimated) |
| | (1) | (2) | (3) |
| Populism | 0.059** | 0.033** | 0.053 |
| | (0.027) | (0.015) | (0.034) |
| Polity2 | −0.010*** | −0.003 | −0.010*** |
| | (0.003) | (0.002) | (0.003) |
| Right-wing | 0.010 | 0.003 | 0.017 |
| | (0.010) | (0.008) | (0.016) |
| GDP per capita (ln) | −0.003 | 0.001 | −0.005 |
| | (0.049) | (0.042) | (0.062) |
| IMF program | 0.033** | 0.019** | 0.038** |
| | (0.014) | (0.010) | (0.017) |
| Observations | 2,250 | 2,250 | 2,250 |
| *Note:* | | | *p<0.1; **p<0.05; ***p<0.01 |

**Table D9:** Regressions of the proportion of scientific WDI indicators missing in a given year on the populism indicator. Includes country and year fixed effects. The U.S. is dropped to ensure that Trump is not driving the results.

| | *Dependent variable:* |
|---|---|
| | Emissions data gap (ln) |
| Populism | 0.306** |
| | (0.135) |
| Polity2 | 0.011 |
| | (0.025) |
| Right-wing | 0.123 |
| | (0.143) |
| GDP per capita (ln) | −0.167 |
| | (0.380) |
| IMF program | −0.030 |
| | (0.125) |
| Fossil fuel (% energy consumption) | 0.033** |
| | (0.016) |
| Value added by agriculture, forestry, and fishing (% GDP) | 0.032 |
| | (0.032) |
| Observations | 774 |
| Adjusted $R^2$ | 0.831 |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 |

**Table D10:** Regressions of the proportion of WDI indicators missing in a given year by source on a populism indicator based on the Blair Institute populism indicator. Includes country and year fixed effects. The U.S. is dropped to ensure that Trump is not driving the results.

# E Drop Most Recent Years

| | *Dependent variable:* | | |
|---|---|---|---|
| | Scientific missingness (all) | Scientific missingness (raw) | Scientific missingness (estimated) |
| | (1) | (2) | (3) |
| Populism | 0.067** | 0.031* | 0.063* |
| | (0.028) | (0.017) | (0.035) |
| Polity2 | −0.009*** | −0.002 | −0.011*** |
| | (0.003) | (0.002) | (0.004) |
| Right-wing | 0.010 | 0.004 | 0.014 |
| | (0.010) | (0.008) | (0.017) |
| GDP per capita (ln) | −0.010 | −0.010 | −0.015 |
| | (0.052) | (0.046) | (0.064) |
| IMF program | 0.032** | 0.015* | 0.040** |
| | (0.015) | (0.009) | (0.018) |
| Observations | 2,203 | 2,203 | 2,203 |
| *Note:* | | | *p<0.1; **p<0.05; ***p<0.01 |

**Table E11:** Regressions of the proportion of scientific WDI indicators missing in a given year on the populism indicator. Includes country and year fixed effects. Post-2015 years are dropped from the data because there is often a lag of a few years in reporting of some indicators.

| | *Dependent variable:* |
|---|---|
| | Emissions data gap (ln) |
| Populism | 0.307** |
| | (0.134) |
| Polity2 | 0.012 |
| | (0.025) |
| Right-wing | 0.116 |
| | (0.138) |
| GDP per capita (ln) | −0.160 |
| | (0.375) |
| IMF program | −0.031 |
| | (0.125) |
| Fossil fuel (% energy consumption) | 0.033** |
| | (0.016) |
| Value added by agriculture, forestry, and fishing (% GDP) | 0.031 |
| | (0.032) |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 |

**Table E12:** Regressions of the proportion of WDI indicators missing in a given year by source on a populism indicator based on the Blair Institute populism indicator. Includes country and year fixed effects. Post-2015 years are dropped from the data because there is often a lag of a few years in reporting of some indicators.

# F Additional Covariates

| | *Dependent variable:* | | |
|---|---|---|---|
| | Scientific missingness (all) | Scientific missingness (raw state) | Scientific missingness (estimated) |
| | (1) | (2) | (3) |
| Populism | $0.102^{***}$ | $0.038^{**}$ | $0.093^{*}$ |
| | (0.036) | (0.016) | (0.054) |
| Polity2 | $-0.010^{***}$ | $-0.001$ | $-0.011^{***}$ |
| | (0.003) | (0.002) | (0.004) |
| Right-wing | 0.021 | $-0.005$ | 0.042 |
| | (0.019) | (0.016) | (0.030) |
| GDP per capita (ln) | 0.039 | 0.043 | $-0.007$ |
| | (0.057) | (0.062) | (0.081) |
| IMF program | $0.038^{**}$ | 0.011 | $0.056^{***}$ |
| | (0.018) | (0.009) | (0.022) |
| Fossil fuel (% energy consumption) | $-0.0005$ | $-0.0001$ | 0.001 |
| | (0.001) | (0.001) | (0.002) |
| Value added by agriculture, forestry, and fishing (% GDP) | $0.005^{**}$ | 0.001 | $0.007^{***}$ |
| | (0.002) | (0.002) | (0.002) |
| Net ODA and official assistance received | $-0.000^{**}$ | $-0.000^{**}$ | $-0.000^{***}$ |
| | (0.000) | (0.000) | (0.000) |
| Observations | 1,302 | 1,302 | 1,302 |
| *Note:* | | | $^{*}$p<0.1; $^{**}$p<0.05; $^{***}$p<0.01 |

**Table F13:** Regressions of the proportion of scientific WDI indicators missing in a given year on the populism indicator. Includes country and year fixed effects.