

THE UPSIDE DOWN: THE USE (OR MISUSE) OF SCIENCE AND STATISTICS IN ADDRESSING ENVIRONMENTAL JUSTICE CONCERNS

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ABSTRACT:

To a large extent, environmental justice has been touted by mainstream environmental non-profit groups and propped up by the EPA as a concept of fundamental importance when considering the disproportionate impact of environmental harms and risks to vulnerable populations. Federal and state agencies are often directed to consider these impacts, but the how these agencies consider and quantify the potential impacts vary greatly depending on the use of scientific data and statistics in assessing potential threats.

We've seen this scenario play out in a number of headline-grabbing stories including the crisis in Flint, Michigan where agency officials failed to inform and protect the public from dangerously high levels of lead in drinking water based on inadequate consideration of the science. Likewise, allegations of misuse of scientific data extend beyond urban areas to rural areas. Opponents of the Dakota Access Pipeline have recently charged that the Army Corps of Engineers used flawed data to support its conclusion that the pipeline was "not injurious to the public interest." Evidence of data manipulation and the mistrust of science underlying these crises suggests that despite legal mandates, proper consideration of scientific principles arguably continue to be inadequate.

This article will examine how agencies are utilizing scientific data and statistics to support their ultimate conclusions and resulting actions when dealing with environmental issues that could profoundly impact vulnerable populations. Do these actions amount to improper manipulation of scientific data? And, how does this ultimately affect environmental justice considerations?

Scientific integrity within governmental agencies is eroding. Its slow demise has occurred over the past fifteen years, most notably with the Bush Administration's intervention in the scientific processes underlying environmental policy and rule-making, and its subsequent distortion or suppression of scientific findings.¹ This included the censorship of findings regarding the risks associated with climate change, the withholding of comments from scientists at the U.S. Fish and Wildlife Service on the destructive impacts of proposed regulatory changes, the stacking of scientific advisory committees with unqualified members with industry ties, altering websites, and suppressing agency reports.² Most notably, the White House infamously edited a discussion of global warming in the EPA's *Draft Report on the Environment*.³ The agency's scientists complained that the altered draft "no longer accurately represents scientific consensus on climate change," which led the EPA to eliminate the discussion in its entirety from the report.⁴

¹ United States House of Representatives Committee on Government Reform – Minority Staff Special Investigations Division, *Politics and Science in the Bush Administration, Executive Summary* (Aug. 2003), socrates.berkeley.edu/~scotch/science_policy/Bush_Admin.pdf.

² *Id.* at iii-iv.

³ *Id.* at iv. Philip Cooney, a CEQ chief of staff and a 15-year veteran of the American Petroleum Institute, made 294 edits to the administration's 364-page [Strategic Plan for the U.S. Climate Change Science Program](#) posted on July 24, 2003, "to exaggerate or emphasize scientific uncertainties or to deemphasize or diminish the importance of the human role in global warming." David Biello, *Editing Scientists: Science and Policy at the White House: How much do policymakers shape the science that comes out of government agencies?*, SCIENTIFIC AMERICAN (Oct. 22, 2009), <https://www.scientificamerican.com/article/white-house-editing-scientists/>.

⁴ *Id.* In fact, a former EPA Administrator in both the Nixon and Ford Administrations commented, "I can state categorically that there was never such a White House intrusion into the business of the EPA during my tenure." *Id.*

The distortion of scientific findings extends beyond policy to legislation, which was meant to protect environmental and human health. In 2005, Congress exempted hydraulic fracturing or “fracking” from EPA oversight under the 1974 Safe Drinking Water Act based on a controversial 2002 draft EPA study⁵ which had found that fracking posed a low risk to drinking water supplies.⁶ Many of these fracking sites are located in rural areas, where much of the population lives below poverty level, triggering environmental justice concerns.⁷

And, changes to scientific advisory boards have arguably had profound impacts on environmental justice. As lead in drinking water continued to be a concern, the Bush Administration replaced three national experts in lead poisoning on the Advisory Committee on Childhood Lead Poisoning Prevention with several individuals who had known ties to the lead industry.⁸ In fact, one

⁵ John Hurdle, *EPA Science Advisory Board sharpens criticism of fracking report*. State Impact, NPR, <https://stateimpact.npr.org/pennsylvania/2016/08/11/epa-science-advisory-board-sharpens-criticism-of-fracking-report/>. On August 11, 2016, five months before President Trump took office, the EPA Scientific Advisory Board called into question the EPA’s controversial fracking report, which concluded that “no widespread, systemic impacts” on drinking water. The report, which was released in June 2015, was criticized by the Board. *Id.* See also Dr. Peter S. Thorne and Dr. David A. Dzombak, *U.S. EPA Scientific Advisory Board Report 2* (Aug. 11 2016).

⁶ Energy Policy Act (EPA) of 2005, Pub. L. No. 109-58, §322 (2005). Congress amended the definition of “underground injection” in the Safe Drinking Water Act to exclude the injection of fluids or propping agents other than diesel fuels that were related to hydraulic fracturing operations which included oil gas, or geothermal production activities. *Id.* This exemption is better known as the “Halliburton Loophole,” which was arguably created at the behest of then Vice-President Dick Cheney, a former CEO of Halliburton. *Id.*

⁷ See Marie Cusick, *Don’t Frack the Rich: Comment puts focus on environmental justice*, PENNSYLVANIA STATE IMPACT, NATIONAL PUBLIC RADIO (June 6, 2016), <https://stateimpact.npr.org/pennsylvania/2016/06/06/dont-frack-the-rich-comment-puts-focus-on-environmental-justice/>.

⁸ U. S. House of Representatives, *supra* note 1 at ii.

of the appointees was a lead industry consultant who had testified that a lead level that amounted to seven times higher than the current recommendations was safe for children's brains.⁹ Over the next decade, very little changed in the regulations that were meant to protect children from lead in drinking water. Arguably, it was that lack of urgency in revising the Lead and Copper Rule, along with the economic crisis and agency apathy, that contributed to the environmental justice crisis that played out in Flint, Michigan.¹⁰ Despite President Obama's 2009 Presidential Memorandum, which directed 24 federal agencies, including the EPA, CDC, and National Ocean and Atmospheric Administration (NOAA), to adopt internal scientific integrity policies to ensure that administrators could not censor inconvenient facts, the demise of scientific integrity continues. And, its profound effect on environmental justice makes it even more difficult for agencies like the EPA to consider environmental justice issues in rule implementation and agency actions.

⁹ *Id.* While the Lead and Copper Rule has currently set an action level of .15 ppb for lead in drinking water, the Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics (AAP) have stated that there is no safe level of lead. See Centers for Disease Control and Prevention, *Childhood Lead Prevention Program*, https://www.cdc.gov/nceh/lead/acclpp/blood_lead_levels.htm (page last updated on May 17, 2017).

¹⁰ See Brie D. Sherwin, *Pride and Prejudice and Administrative Zombies: How Economic Woes, Outdated Environmental Regulations, and State Exceptionalism Failed Flint, Michigan* 88(3) U. COLO. L. REV. 653 (Summer 2017).

The concept of environmental justice is easier to discuss in a theoretical sense as opposed to actually applying it.¹¹ Agencies like the EPA continue to struggle with integrating this concept into its analyses, acknowledging that there is little “precedent for how to conduct an environmental justice analysis in the context of a national rulemaking.”¹² Communities most affected by environmental justice issues have all of the burdens, but lack most of the amenities afforded to wealthier suburbs.¹³ While environmental health problems can affect wealthier and whiter communities, the connection of race and economic class to the distribution of harm is commonplace.¹⁴

There are two current trends of thought or rhetoric that pose greater challenges to identifying and prioritizing environmental justice issues than ever before. First, and most importantly, is the erosion of transparency and integrity of science utilized by administrative agencies. This is particularly evident given the Trump Administration’s policies, which include the use of

¹¹ See Environmental Protection Agency, *Technical Guidance for Assessing Environmental Justice in Regulatory Analysis* 4 (June 2016), https://www.epa.gov/sites/production/files/2016-06/documents/ejtg_5_6_16_v5.1.pdf.

“environmental justice” means the “fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” EPA, *Environmental Justice*, <https://www.epa.gov/environmentaljustice>. (last accessed on July 7, 2017).

¹² Shannon M. Roesler, *Addressing Environmental Injustices: A Capability Approach to Rulemaking*, 114 W. VA. L. REV. 49, 52-53 (2011). See also Env’tl. Prot. Agency, *Draft Environmental Justice Methodology for the Definition of Solid Waste Final Rule* (Jan. 13, 2009), <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-RCRA-2009-0315-0002>.

¹³ Miranda Massie, et. al., *Whose Survival? Environmental Justice As A Civil Rights Issue*, 13 N.Y. City L. Rev. 257, 279 (2010).

¹⁴ See *id.* at 268.

the Congressional Review Act to repeal over a decade of scientific data used to draft the Stream Protection Rule¹⁵, a shift in information availability for the public¹⁶, and the recent dismantling of the EPA’s scientific advisory board.¹⁷

The second challenge is the use of the principles of federalism and economic justification to justify rerouting funding and science away from the communities that are most at risk in light of a “jobs” argument that is often based on skewed data. Federalism, as it interacts with environmental regulatory issues, promotes a decentralized policy process where it is not uncommon for business interests “hold most of the cards not dealt to establishment environmentalists.”¹⁸ Therefore, environmental justice must often contend with various aspects of federalism such as the federal level separation of powers or even private sector activities and policies operating at both state and local level governments.¹⁹ The overarching presumption of environmental justice assumes that advocates simply want equity or “equalized pollution,” meaning that all cases should be treated alike.²⁰ Instead,

¹⁵ See Brie D. Sherwin, *La-La Land: Regulating Coal Waste in the Trump Era*, 37 STAN. ENV. LAW J. (forthcoming) (Fall 2017). Available at SSRN: <https://ssrn.com/abstract=2972746>.

¹⁶ Coral Davenport, *With Trump in Charge, Climate Change References Purged From Website*, N.Y. TIMES (Jan. 20, 2017), https://www.nytimes.com/2017/01/20/us/politics/trump-white-house-website.html?_r=0.

¹⁷ Coral Davenport, *E.P.A. Dismisses Members of Major Scientific Review Board*, N.Y. TIMES (May 7, 2017), <https://www.nytimes.com/2017/05/07/us/politics/epa-dismisses-members-of-major-SCIENTIFIC-review-board.html>.

¹⁸ CHRISTOPHER H. FOREMAN, THE PROMISE AND PERIL OF ENVIRONMENTAL JUSTICE 7 (2011).

¹⁹ *Id.*

²⁰ *Id.*

due to the very nature of regional EPA offices, set up to address local and regional problems, and movement of environmental justice toward individualized roles, the focus should ideally be on the community and toward particularized environmental solutions.²¹ However, when local and state governments fail to recognize and address an imminently dangerous public health issue like excessively high lead levels in drinking water, it then becomes difficult to make the argument that states are better equipped to handle such problems.

Administrative failures to utilize the best science and statistics at a federal level also lead to public distrust of the government's ability to safeguard its citizens. This public distrust was evident in the recent protests of the construction of the Dakota Access Pipeline, a \$3.8 billion-dollar pipeline; the construction of which is set to cross the Missouri River, just a half mile upstream of the Standing Rock reservation. The pipeline, currently being constructed by Texas-based Energy Transfer Partners,²² is expected to transport over half a million barrels of oil per day. The Sioux Nation has sued the Army Corps of Engineers, arguing that this construction violates treaty

²¹ *Id.*

²² Justin Worland, *What to Know About the Dakota Access Pipeline Protests*, TIME MAGAZINE (Oct. 28, 2016), time.com/4548566/Dakota-access-pipeline-standing-rock-sioux/. As of October 2016, President Trump owned stock in Energy Transfer Partners. *Id.*

rights and threatens the preservation of sacred areas as well as its access to safe drinking water.

While Executive Order 12,898 directs federal agencies, like the Corps, to use population data “to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations,”²³ the Sioux have argued that the Corps has failed to do so. Prior to the construction of the pipeline, the Environmental Protection Agency communicated its concern to the Army Corps of Engineers of its use of large-scale statistics to avoid environmental justice concerns associated with the Sioux reservation. Specifically, the Corps utilized arguably improper statistics by delineating an .5-mile area around the pipeline as the “affected” area, effectively excluding the entire reservation which was located .55 miles downstream, just 80 yards beyond the boundary of the assessment.²⁴ As a result, the Corps was effectively able to avoid addressing environmental justice issues as applied to the Sioux. It concluded that “there would be no direct or indirect effects to Tribal lands, members, or protected cultural resources” and

²³ 59 Fed. Reg. 8113 (Feb. 16, 1994).

²⁴ Earthjustice, Plaintiff Standing Rock Sioux Tribe’s Memorandum in Support of Its Motion for Partial Summary Judgment 29, (No. 1:16-cv-1534-JEB) (Feb. 14, 2016), earthjustice.org/sites/default/files/files/Memo-ISO-SRSTs-Mtn-for-PSJ.pdf

issued a Finding of No Significant Impact (FONSI).²⁵ In response, the Sioux Nation argued that the Corps had limited or “gerrymandered” its geographic focus to avoid any environmental justice analysis that would include the tribe.²⁶ The Obama administration agreed with the Sioux and required the Corps to complete a lengthier Environmental Impact Statement (EIS) review that it had previously concluded was unnecessary. However, the Trump Administration changed the course of the review on January 24, 2017 by issuing a Presidential Memorandum which directed the Corps to:

to take all actions necessary and appropriate to . . . review and approve in an expedited manner, to the extent permitted by law and as warranted, and with such conditions as are necessary or appropriate, requests for approvals to construct and operate the DAPL, including easements or rights-of-way.²⁷

Following that directive, the Corps concluded that it was not required to perform additional studies and therefore issued the easement. More recently, on June 14, 2017, a federal judge ordered the Trump administration to conduct further environmental reviews of the Dakota Access pipeline.²⁸ Even though the U.S. Army Corps of Engineers “substantially complied” with federal environmental laws, U.S. District Judge James Boasberg wrote that, “it did

²⁵ United States Army Corps of Engineers, *Environmental Assessment, Dakota Access Pipeline Project* 86 (2016), cdm16021.contentdm.oclc.org/cdm/ref/collection/p16021coll7/id/2801.

²⁶Earthjustice, *supra* note 20 at 28.

²⁷ ECF No. 172-8, § 2.

²⁸ Spencer S. Hsu, *Federal judge orders environmental review of Dakota Access pipeline* (June 14, 2017), THE DENVER POST, <http://www.denverpost.com/2017/06/14/dakota-access-pipeline-federal-judge/>.

not adequately consider the impacts of an oil spill on fishing rights, hunting rights, or environmental justice, or the degree to which the pipeline's effects are likely to be highly controversial."²⁹

While the federal court stepped in and temporarily halted the construction of the pipeline, there is still larger question of how to strengthen scientific integrity in administrative processes in light of a culture that is increasingly hostile and distrustful of science. Without transparency and accuracy, science fails to achieve its singular purpose of providing truth and factual support for agency decisions. The manipulation of science through advisory committee appointments and report revisions, while furthering policy, does little to achieve agency goals of informed decision-making based on technical expertise.

Certainly, standards for scientific testimony in the courtroom have been continually reinforced since the U.S. Supreme Court decided *Daubert v. Merrell Dow Pharmaceuticals* in 1993.³⁰ The question is whether the same rigor should be applied in agency decision-making. Currently, there are two proposed pieces of legislation that have been introduced to address scientific integrity and transparency. Sen. Bill Nelson (D-FL), the ranking member of

²⁹ U.S. District Court Memorandum Opinion, *Standing Rock Sioux Tribe et al., v. U.S. Army Corps of Engineers et al.*, 1:16-cv-01534-JEB 84 (issued June 14, 2017), earthjustice.org/sites/default/files/files/DAPL-order.pdf.

³⁰ *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993).

the Senate Commerce, Science, and Transportation Committee, introduced the “Scientific Integrity Act” in February 2017, and Rep. Paul Tonko (D-NY) introduced a similar bill on March 2, 2017. Republican members have also advanced several measures to reform federal rulemaking processes when it comes to agency consideration of scientific findings; they are the “Honest and Open New EPA Science Treatment (HONEST) Act” and the “EPA Science Advisory Board Reform Act.”

My goal is to analyze each proposed piece of legislation in the context of a more detailed account of the stories I mentioned above (as well as others) in order to ascertain whether the legislation will remedy the issue of scientific integrity, particularly as it plays out in an environmental justice context.