

When Scientific Research and Legal Practice Collide

Legal equality safeguards deliberative process while improving transparency in scientific research.

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The modern historical record and an ongoing dispute between BP and academic researchers reveal that the U.S. legal system can be exploited to attack scientific research and academic thought when it challenges entrenched interests or beliefs. These legal practices erode the ability of scientific research and academics to function properly.

In 1954 an economist, Paul Sweezy, was summoned for questioning about “subversive persons” within the United States. He refused to answer questions related to his academic lectures and publications, because they violated his constitutional right to freedom of expression. Sweezy was found in contempt of court and incarcerated. The U.S. Supreme Court overturned this decision in 1957 (1).

In 1980, Dow Chemical Company subpoenaed confidential documents from an ongoing study of the carcinogenic potential of defoliants known as Agent Orange from researchers at the University of Wisconsin. Dow sought to use preliminary results from the documents to support its claim that the scientific analysis was inconclusive in a separate legal action against the U.S. Environmental Protection Agency. The researchers were not parties to the case between Dow and the government and refused to comply with the subpoena. The Federal District Court sided with the university researchers [(2), paragraph 5, p. 6], writing that

...In the early stages of any research project there are likely to be false leads or problems which will be resolved in the course of the study with no ultimate adverse effect on the validity of the study. To force production of all information demanded by the subpoenas is likely to jeopardize the study by exposing it to the criticism of those whose interests it may ultimately adversely affect, before there has been an opportunity for the researchers themselves to make sure the study is the result of their best efforts.

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22 April 2010, Deepwater Horizon. This oil platform exploded in the Gulf of Mexico, killing 11 people and causing the largest accidental oil spill in history.

A decade after the Agent Orange decision, a group of tobacco companies subpoenaed the Mount Sinai Medical School for data and documents from two published lung cancer studies. The medical school contested these subpoenas, but the Federal Court sided with the tobacco companies, stating that once the results were published, the public had an interest in resolving disputes that involved the accuracy of the conclusions (3). Subsequent research uncovered systematic attempts by tobacco companies to impeach scientific findings linking health hazards to tobacco use (4–9).

In 2011, as the defendant in a product liability lawsuit, Bayer pharmaceuticals sought confidential peer-reviewer comments from a published study. The Federal Court denied Bayer’s request, citing the importance of peer review to “ensure integrity and reliability in scientific activity and reporting,” stating that the “pillars of a successful review process are confidentiality and anonymity; anything less discourages candid discussion and weakens the process” and that “damage to the peer review process can also undermine efforts to improve public health and safety” (10).

Research into the Deepwater Horizon disaster has led to similar legal confrontation. In late April 2010, BP contacted us, a group of academic researchers at the Woods Hole Oceanographic Institution (WHOI), requesting technical expertise to assess the failed blowout preventer. We felt an ethical obligation to assist with the disaster response. We quickly provided recommendations to BP and assembled an on-site operations team to acoustically measure the well’s flow rate and to determine the actuation states of the blowout preventer’s shear rams. On 6 May 2010, BP preemptively canceled the WHOI assessment operation (11) in favor of an ultimately unsuccessful attempt to deploy a containment dome (12). On 23 May 2010, the U.S. Coast Guard contacted WHOI because “delays in measurement of the oil flow are no longer acceptable and require urgent response” (13). The Coast Guard tasked us with measuring the flow rate and delivering an independent findings report within 5 days of completing operations.

We completed acoustic measurement of the flow rate but were denied by BP the opportunity to collect fluids released from

the well (14), so our preliminary estimate only described total volumetric flow rate (15). We later returned to the site and collected samples (14). For more than a year after this, we, along with our colleagues at other academic institutions, provided assistance at no cost to BP or the U.S. government to develop a theoretically rigorous model of the well fluid chemistry and flow rate. This culminated in two peer-reviewed papers in 2011 (16, 17).

In late 2011, BP subpoenaed WHOI, demanding that “any transmission or exchange of any information, whether orally or in writing, including without limitation any conversation or discussion” be surrendered to BP (18). BP claimed that it needed “to advance BP’s and other parties’ understanding of scientific work” (19) but also made public allegations against us that it portrayed as “not simply one of impeachment, but one of integrity, reliability, and reproducibility” (20).

As is common in scientific research, our analysis evolved, gaining precision over time. Our initial calculations drew from a small subset of data and used simplifying approximations to enable quick estimation under a tight deadline. Intermediate calculations benefited from chemical composition and final calculations from key information about source geometry. All of the earlier estimates are within the error budget of the final peer-reviewed calculation, which indicates that any quantitative differences are statistically insignificant. All of these calculations are also within the range of values that BP’s own engineering staff calculated and then allegedly attempted to destroy (21). Furthermore, these estimates are also within the range of published values from multiple independent studies using separate methods of analysis (22–25). Most important, we promptly supplied BP with over 52,000 pages of materials, including all the information needed to verify our findings (26).

WHOI fought BP’s motion to compel production of additional deliberative and confidential materials because doing so would compromise independent scientific inquiry. The Court recognized the principle that we asserted, writing in its decision that production of these deliberative documents “could hamper future research efforts”; however, the Court still ordered WHOI to surrender these documents to BP “even if the only purpose for the analysis documents is impeachment” (27).

Through other legal actions, BP obtained a prepublication manuscript submission (20) from the editor for one of the WHOI papers (17). Through the subpoena, BP has also

obtained copies of the reviewers’ comments and subsequent confidential deliberations among the authors and peer reviewers.

Like the Dow Chemical case, BP sought prepublication materials from academic researchers who were not party to a court case in order to assert that the researchers’ findings were contradictory or inconclusive. Like the Bayer product liability case, BP sought access to peer-review deliberations with the goal of limiting its financial liability (20). Similar to the tobacco company cases, BP is alleged to have suppressed its own findings (21) while attempting to publicly discredit similar findings in peer-reviewed literature.

Perhaps the most disturbing parallel is to the case of Sweezy, because BP has informed WHOI of its intention to depose our team of researchers for questioning with the same jeopardy of sanctions that Sweezy faced. Because we are not litigants to the case, having chosen to remain independent and impartial (i.e., not serve as expert witnesses), we have no legal standing in court. Thus, although BP has made generalized assertions of misconduct in the Courts’ public record, our opportunity to challenge these claims is restricted. The law paradoxically requires that, as nonlitigants, we must be found in contempt of court before we are granted legal standing (upon appeal) to defend our work and reputations.

Although it is tempting for researchers to seek the protections used by journalists for confidential sources and material, journalistic privilege claims are tenuous. Unlike attorney-client and doctor-patient privilege, federal legislation for journalistic privilege is absent.

Our academic, governmental, and industrial research communities should work together to better align American legal practice with the deliberative process of science. This can be accomplished through new federal legislation that protects researchers from legal harassment by interests seeking to silence scientific inquiry or retribution for publishing independent research findings.

Legal equality facilitates scientific transparency and accountability. If independent researchers are drawn into a legal proceeding and forced to surrender confidential deliberative documents or submit to deposition, they should be granted the same legal rights that are afforded to litigants. At a minimum, independent researchers should be granted legal standing to defend their work and reputations with the same level of access to legal discovery as litigants. This should include reciprocal subpoena power to examine confidential information held by litigants, as well as the right to seek direct legal remedy for unsubstantiated allegations. Furthermore, if

a litigant seeks confidential documents from peer reviewers and editors, there should be a court-adjudicated finding of fact, requiring compelling evidence of misconduct before these materials are surrendered.

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10.1126/science.1225644