

Scientific Ghostwriting in the Amazon? The Role of Experts in the Lawsuit against Chevron in Ecuador

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This woman does not belong in a RICO indictment.... She does not belong in a mob indictment.

—*Molly's Game* (2017)

On the first day of February in 2011, lawyers for the Chevron Corporation filed a civil suit against an aqueous geochemist under federal racketeering and corruption laws in the United States for her contribution to a lawsuit against the company in Ecuador.¹ The legal action claimed that Ann Maest and others had ghostwritten significant portions of a report that an independent expert appointed by the courts in Ecuador submitted under his own name (Chevron Complaint 2011). The original case addressed environmental damage and health impacts resulting from two decades of petroleum extraction in the lowland rainforest of Ecuador. Although the complaints against Maest, one of her colleagues, and the consulting firm that employed them both were eventually

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¹ I began following this long-running case in 1995, when I invited Cristobal Bonifaz, the original attorney for the plaintiffs in Ecuador, to speak to my students at Mount Holyoke College. Around the same time, I had become involved as an advisor in a similar lawsuit against the Australian mining company BHP addressing the environmental impact of the Ok Tedi copper and gold mine in Papua New Guinea (Kirsch 2014).

withdrawn, the Racketeer Influenced and Corrupt Organizations (RICO) Act judgment against the lawyer for the plaintiffs has prevented the people whose lives and livelihoods have been affected by widespread oil contamination from collecting a multibillion-dollar judgment against Chevron in the Ecuadorian courts. This article treats legal transcripts and depositions of key actors as examples of life writing to examine the contribution of scientific experts to environmental litigation, including differences in how authorship and credit are assigned in academic publications and consulting. It also contributes to recent scholarship on the instability of scientific authorship by comparing different forms of ghostwriting.

The legal proceedings addressed claims about scientific ghostwriting, a form of reverse plagiarism in which authorship is attributed to someone other than the person who produced the text. Ghostwriters sever all relationships to their written work, forfeiting ownership and control. Like plagiarism, however, the person recognized as the author of the final document takes credit for work they did not produce. Ghostwriting is also similar to plagiarism in that the process is generally concealed from public view.

Scientific ghostwriting is usually an economic transaction. A text is produced with the expectation of monetary compensation for the investment of labor in the project. A prominent example is medical ghostwriting, in which pharmaceutical companies hire scientific writers to prepare articles that are subsequently published under the name of established authors (Sismondo 2009). These individuals are free to modify the final version of the text, but often fail to do so (Healy 2006: 68–69; Kassirer 2004: 31–33; although see Fugh-Burman 2010: 2, 4). Under ordinary circumstances, scientific authorship includes participation in both the conduct of the research and the writing up of the results (Biagioli 1998). But in the case of scientific ghostwriting, these two processes are separated and occur independently of each other. This deviation from standard practice circumvents conventions intended to cordon off scientific research from commercial interests, which may influence the work and thereby compromise its value. Concealing these transactions is intended to avoid scrutiny that would diminish the credibility of the results. Their clandestine nature also implies recognition that something improper has occurred.

In other contexts in which ghostwriting occurs, however, the transfer of authorship from one party to another is considered acceptable. This is the case for political speechwriters, who may receive credit for producing the text, while the politician is held accountable for the underlying message. Ghostwriters are also commonly engaged to facilitate autobiographical writing, or in the case of literary fiction, to develop a new plot line for an established cast of characters (Squires 2010). But unlike these other forms of ghostwriting, the revelation that a scientific text has been ghostwritten can have negative repercussions, including the retraction of the published article and potential legal penalties. There are two primary reasons for this. First, scientific ghostwriting may conceal conflicts of

interest about which readers should be informed when evaluating the credibility of the work. Second, scientific ghostwriting splits the relationship between writing and responsibility that are conjoined in the modern figure of the author.

In his classic essay, “What Is an Author?” originally presented as a lecture to the Société française de philosophie in 1969, Foucault (1984: 108) argues that the “author function” is the outcome of a system of intellectual property rights that emerged at the end of the eighteenth and the beginning of the nineteenth centuries. “Texts, books, and discourses really began to have authors ... to the extent that authors became subject to punishment, that is, to the extent that discourses could be transgressive” (ibid.). While recognition of the intellectual property of authors has been traced back to contractual relationships between writers and booksellers during the seventeenth and eighteenth centuries (Chartier 2003; see Rose 1993 and Woodmansee 1994), Foucault’s observations about authorship and responsibility continue to frame discussion in multiple fields of inquiry, including science and technology studies (Biagioli and Galison 2003a; Biagioli, Jaszi, and Woodmansee 2011a). These deliberations emphasize the contemporary instability of scientific authorship, including new forms of recognition granted to a wider array of scientific contributors during the era of big science (Biagioli 2000: 96; Galison 2003). Other examples come from investigation into cases of scientific misconduct (Biagioli 1998) and debates about new forms of borrowing in a digital era (Biagioli, Jaszi, and Woodmansee 2011b: 8). To the expanding list of contexts in which scientific authorship has been called into question, this article adds disputes about authorship and credit in the contributions of scientific experts to legal proceedings.

Attention to these issues sheds light on “the very institution of authorship, how it came about, the aporias that underline it, the economy it supports, and the legal constructs invoked to justify it” (Biagioli and Galison 2003b: 3). This article suggests that the conventions of scientific authority are less stable or uniform across contexts than is commonly assumed by the lawyers and judges participating in legal proceedings. In particular, the article examines the expectation that scientists working outside of the academy are governed by the same rules and obligations that apply to scientific research conducted within university settings, most notably the conventions through which scientific authors are recognized and held responsible for their publications. In contrast, work produced by scientific consultants and expert witnesses are subject to other standards and practices regarding the assignment of credit.

In what follows, I begin by describing Ann Maest’s career path as a geochemist who studies water pollution resulting from resource extraction, which informed her participation and contribution to the lawsuit against the American oil company. Next, I present a short history of the legal proceedings against Chevron, including the decisions made by the lead attorney for the plaintiffs, who fought a no-holds-barred contest against a powerful corporation, and the company’s steadfast refusal to acknowledge

any outstanding liability resulting from its petroleum operations in Ecuador. I then turn to the evidence presented in the RICO case, including a pivotal pair of video clips that included comments made by Maest. Attention to testimony presented during the legal proceedings shows how scientists working for the plaintiffs' attorney sought to counter claims made by experts for the petroleum company, offering insight into how consultants and expert witnesses understand and act on their scientific responsibilities.²

SLOW VIOLENCE IN THE ORIENTE

The primary plaintiffs in the lawsuit against Chevron are indigenous peoples living in lowland Ecuador, in the region of the Amazon known as the Oriente, and peasants who relocated there from the highlands for economic opportunities (Cepek 2018; Kimmerling 2006; Sawyer 2008). Between 1972 and 1992, Texaco discharged an estimated 16 billion gallons of wastewater contaminated by petroleum, mineral salts, and heavy metals into shallow, unlined pits instead of injecting them back underground into the oil wells from which they were extracted, the standard industry practice at the time (Kimmerling 2006: 450; Gupta Brief 2014: 6). Some of these pits are the size of swimming pools (Keefe 2013: 202). During heavy rains, excess crude oil and other contaminants in these pits were discharged into local rivers, which also violated industry standards. Texaco even installed drainage pipes in the larger pits to facilitate the overflow. A corporate memo written at the time instructed Texaco employees to destroy all documentation of the pits, suggesting that the company was aware of the impropriety of its actions and concerned about its future environmental liabilities (Gupta Brief 2014: 7). These decisions were made at Texaco's corporate headquarters in White Plains, New York.

Upon Texaco's departure from Ecuador in 1992, the company left behind toxic sludge in hundreds of open pits.³ The state-owned oil company Petroecuador assumed control over Texaco's concessions and continued to operate the oil wells that were still productive. As a result, residents of the region have routinely been exposed to hazardous and potentially carcinogenic chemicals in their drinking water as well as the water they use for cooking, bathing, and washing clothes. They have also been affected by crude oil through contact and respiration, as well as through consumption of contaminated fish, livestock, and game animals (Cepek 2018). Evidence shows that the people living in the region have higher than expected rates of cancer, miscarriage, birth defects, and other health problems resulting from chronic exposure to

² Elsewhere, I have written about my contributions to various legal proceedings as a consultant and expert witness (Kirsch 2018).

³ Texaco's failure to maintain a clear inventory of its sites exacerbated the challenges of the legal proceedings.

petroleum (Center for Economic and Social Rights 1994; Hurtig and San Sebastian 2002; San Sebastian et al. 2001).⁴ As an indicator of the pervasive character of the problem, the anthropologist Michael Cepek (2018: 132) recorded the extensive vocabulary used by the Cofán, one of several indigenous peoples living in the region, to describe the properties of crude oil, including “*ámundetssi* (dirty), *tsu’jutssi* (stinky), *sintssi* (black or dark), *tu’atssi* (sticky), *sampe’chatssi* (thick), *châpetssi* (soft), *yaya’pa’caon* (like fat), *cocoqui’can* (like the dark beeswax used to make blowguns), *tena’tssi* (like water covered with thin pools of grease or fat) ... and *qquitssatssatssi* (like syrupy liquid that slowly drips down one’s throat).”

The environmental impact of Texaco’s petroleum operations in the Amazon is an example of what Rob Nixon (2011: 2) calls *slow violence*, which “occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space ... that is neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales.” He notes that “slowly unfolding environmental catastrophes present formidable representational obstacles that can hinder our efforts to mobilize and act decisively” (ibid.: 2). Elsewhere I have described the environmental impact of the Ok Tedi copper and gold mine in Papua New Guinea in similar terms, noting: “Such slow-motion disasters are more difficult for us to perceive than catastrophes caused by earthquakes, hurricanes, or tsunamis. Sudden events also form the template for industrial disaster in the public imagination: the explosion that released a cloud of poisonous gas in Bhopal, the nuclear meltdown in Chernobyl, or the *Exxon Valdez* shipwreck that spilled eleven million gallons of crude oil in Alaska. It requires a different sense of time to adequately perceive the impact of slow-motion disasters as they are happening” (Kirsch 2014: 28). The slow violence in the lowland rainforests of Ecuador increased the challenge of holding Texaco legally accountable for its impacts.

Lawyers representing thirty thousand people living in the affected area initially filed suit against Texaco in the U.S. District Court for the Southern District of New York in 1993, seeking relief from contamination by petroleum and its resulting health impacts through cleanup and compensation (Kimmerling 2006). But Texaco challenged the jurisdiction of the U.S. courts in *Aguinda v. Texaco* on the grounds of *forum non conveniens*, arguing that the case should be heard in Ecuador, where the alleged violations occurred and the majority of the witnesses and plaintiffs reside, rather than in the United States, even though the latter was where the fateful decision was made not to reinject the “produced

⁴ Epidemiological assessments of the health consequences of exposure to crude oil in the Amazon have been criticized by scientists affiliated with Chevron, including Arana and Arellano (2001); see discussion by Hurtig and San Sebastián (2003; 2005) and Terracini (2005) on whether epidemiologists should follow the precautionary principle when addressing these issues.

water” from the oil wells back into the ground.⁵ As a condition of transferring the case abroad, Texaco agreed to abide by the judgment of the court in Ecuador. The primary form of relief available to the company in the U.S. courts in the event of an adverse judgment in Ecuador was to establish that it had been fraudulently obtained (Gupta Brief 2014: 9–10, 103).⁶

In response to the lawsuit, Texaco agreed in 1994 to pay Petroecuador US\$40 million to rehabilitate the damages to the area (Kimmerling 2006: 494). Texaco was assigned one-third of the liability for the environmental impacts and Petroecuador the remaining two-thirds (Barrett 2014: 56). Three years later, the state certified that the cleanup was complete, absolving Texaco of any further environmental liability. However, the adequacy of the remediation effort was subsequently challenged in the lawsuit against Chevron, which merged with Texaco in 2001. This includes whether the people living in the region, who have been continuously exposed to pollution since the 1970s, are entitled to compensation from Chevron (Cepek 2018: 244).

When the lawsuit was subsequently filed in Ecuador in 2003, a decade after the original case in New York was initiated, the attorneys representing the plaintiffs elected not to seek compensation from the state-owned oil company Petroecuador, but to focus solely on Chevron’s liability for contamination of the rain forest, in the hope that the state would eventually lend its support to their case. When Texaco first sought to shift the venue of the case from New York to Ecuador, the company was confident that the oil industry-friendly military government would protect its interests. But when the left-leaning populist Rafael Correa was subsequently elected president in 2007, the oil company lost the political support of the state; Correa subsequently criticized Chevron for failing to clean up the Oriente in a public media campaign focused on the company’s “dirty hands,” prompting Chevron’s lawyers to retaliate by accusing the state of interfering with the course of justice (Rogers 2013: 504).

Most popular accounts of the lawsuit against Chevron in Ecuador focus on the behavior of Stephen J. Donziger, the American lawyer who oversaw the proceedings in Ecuador (Barrett 2014; Keefe 2013). Donziger’s “brashness and tendency toward hyperbole; his tenacity and passion in the service of his clients; [and] his courage in the face of Chevron’s unrelenting attacks,” as his own legal counsel characterized his behavior (Gupta Brief 2014: 23), propelled the case forward against a formidable opponent. However, the same attitudes and habits led to critical errors of judgment in Donziger’s interactions with the judiciary in

⁵ The other grounds presented for dismissing *Aguinda v. Texaco* were the principle of international comity, or deference to the judicial sovereignty of other nations, and the failure to enjoin Ecuador and Petroecuador as parties to the case, limiting the ability of the plaintiffs to recover damages (Kimmerling 2006: 514–15).

⁶ See discussion of New York State’s Recognition of Foreign Country Money Judgments Act (Gupta Brief 2014: 9–10).

Ecuador (Barrett 2014; Keefe 2013), including his direction and oversight of the contributions made by Maest and her colleagues to the report submitted by the court-appointed independent expert.⁷ Donziger's decision to provide a documentary filmmaker access to private discussions among members of the plaintiffs' legal team was also deeply flawed, since it yielded crucial evidence against both Donziger and Maest in the RICO case.

SCIENTIFIC PRACTICE AND LIFE WRITING

Ann Maest earned her Ph.D. in geochemistry and water resources at Princeton University and subsequently accepted a postdoctoral fellowship with the U.S. Geological Survey in Menlo Park, California. Her attention to groundwater pollution led her career to take a very specific turn. A co-authored study that epitomizes her research interests compared the environmental impact assessments of 193 hard rock mines in the United States since 1975 to their subsequent impacts on water quality (Kuipers and Maest 2006). The report determined that the original predictions systematically underestimated the long-term impacts of these projects. It also challenged the way environmental impact assessments are primarily conducted by industry consultants who are not held accountable for accuracy of their predictions.

During the course of her career, Maest has provided scientific expertise on the impacts of mining and petroleum projects on water quality to state and federal agencies, conservation organizations, and indigenous communities in the United States and Latin America. She conducted research at a Superfund site in Butte, Montana (Maest Deposition 2010: 73); on the downstream impacts of the controversial Marlin silver and gold mine in Guatemala; on behalf of the Coeur d'Alene Tribe and the U.S. government in a lawsuit against several mining companies in Idaho (*ibid.*: 74–75); and for a Clean Water Act lawsuit against a mining company in Colorado (*ibid.*: 75). She also provided expert advice to the Environmental Protection Agency on the proposed Pebble Mine project in Alaska. In 2008, Maest and I contributed to an interdisciplinary review of the environmental and social impact assessment of a proposed bauxite mine in Suriname (Goodland 2009; Maest 2009). In 2012, she was a member of a panel that advised the government of El Salvador on a proposed moratorium on hard rock mining (Bebbington, Goodland, and Maest 2012).⁸ Maest has also served

⁷ Judith Kimmerling (2006: 631–33, 659) has criticized the structure of the class action litigation against Chevron in Ecuador, arguing that it disenfranchised members of the plaintiff's class from active participation in the case, that any restitution would be paid to the wrong parties, and that the suit had "become an end unto itself, rather than one means among others to a great goal—as if a victory in court, or settlement with the plaintiffs' lawyers, would automatically benefit all affected groups and the rainforest environment."

⁸ I subsequently contributed to these discussions in a co-authored report on corporate social responsibility, mining, and political violence in El Salvador (Kirsch and Moore 2016).

on several committees examining environmental policies concerned with minerals and energy for the National Academy of Sciences (Goodland 2009: 61).

Given her experience and expertise, Maest was an obvious candidate when Donziger sought to solidify the case against Chevron with additional scientific analysis. As Donziger noted in his professional diary, which was subpoenaed in the RICO case, “There is no market for people willing to do work that holds oil companies accountable.” Maest subsequently confirmed telling Donziger about the relatively small number of scientists willing to undertake research that is critical of extractive industry: “I do recall saying that there’s not much money ... to be made on ... holding oil companies accountable” (Maest Deposition 2010: 155). This is in keeping with the widespread corporate practice of attempting to buy up all of the available expertise after an environmental mishap, while trying to silence the remainder (Kirsch 2014: 132).

Maest became involved in the Ecuador project in late 2005 or early 2006, advising Donziger on “general technical strategy” for the case while working with the small non-profit organization E-Tech International, where she was chief scientist (Maest Deposition 2010: 72). When the project expanded in scope, Maest encouraged Donziger to engage the larger environmental research and technical services firm Stratus Consulting, which subsequently supervised her work on the case. Maest’s colleague Douglas Beltman, who managed the project for Stratus, testified about the scope of their work: “93 sites were sampled [in] total between the judicial inspections and the court expert. That’s a lot of sites being sampled. ... At those sites it generated 64,000 chemical results, that’s a lot of chemical results” (Beltman Deposition 2011: 135). The primary task for Maest, Beltman, and their colleagues at Stratus was to organize, analyze, and summarize this data so that it accurately represented the environmental impacts caused by Texaco’s petroleum operations. Maest and Beltman also had the ability to recommend that additional samples be collected and analyzed to strengthen the case.

My attention to Maest’s role in the lawsuit against Chevron is intended to contribute to interdisciplinary discussion on individual lives and biographical materials characterized by the rubric of *life writing* (Jolly 2001). A pertinent example of this work is Hirokazu Miyazaki’s (2013: 41) application of what he calls “bibliographic biography” in his research on derivative traders in Japan, in which he examines the “books, academic papers, and various work documents that traders read, write, and cite.” This provides Miyazaki with a “window into their practical and theoretical engagement with the market, and with capitalism more generally” (ibid.). Similarly, I have examined the candid writings of a prominent environmental sociologist on his decision to consult for Exxon after the 1989 *Valdez* oil spill in Alaska (Kirsch 2020). In that article, I argued that scholarly commitment to objectivity can act as a filter or a screen that

discourages scientists from considering their political responsibilities.⁹ This article presents a complementary example of life writing by analyzing legal documents, including court transcripts, lengthy depositions of key individuals, and subpoenaed notes and professional diaries quoted in court reports and judgments. Consulting these materials yields insight into matters individual informants might be reluctant to discuss. It also provides real-time access to what people thought at different moments in contrast to their retrospective assessments, although it is important to recognize that many of these exchanges occurred under conditions of constraint (see Ginzburg 1980).

CONTENTIOUS LITIGATION IN ECUADOR

By the time the case shifted venues from New York to Ecuador in 2003, neither side had much interest in reaching a compromise.¹⁰ Donziger went for broke, soliciting celebrity endorsements and high-profile media coverage, while raising economic resources for the case by selling percentages of a successful verdict to law firms and hedge funds (Keefe 2013: 206). Chevron was equally determined to play hardball, refusing to acknowledge any ongoing liability for environmental impacts from its operations in the Oriente. As a spokesperson for Chevron asserted, “We’re going to fight this until Hell freezes over—and then we’ll fight it out on ice” (quoted in *ibid.*: 201). The company has spent nearly one billion dollars defending itself in the case and blocking international enforcement of the judgment in Ecuador (Randazzo 2021).

The initial phase of the hearings in Ecuador included court-directed inspections of scores of contaminated sites in remote locations, accompanied by lawyers from both sides, with Chevron’s attorneys filing hundreds of motions and objections from the field (Gupta Brief 2014: 12). It was a cumbersome, expensive, and time-consuming process. Frustrated with the slow pace of the inspections and concerned about potential bias against his clients’ case (Barrett 2014: 99–100), Donziger successfully lobbied the court to dispense with public inspections and appoint an independent expert to conduct his own investigation.¹¹ As Patrick Keefe (2013: 204) notes, Ecuador “does not have jury trials, so enormous discretionary power is invested in judges, who, for the most part, are poorly paid civil servants. Donziger worried that they might be susceptible to bribery. In the United States, lawyers are forbidden to meet with

⁹ The environmental sociologist was recruited to participate in a project funded by Exxon that sought to challenge the efficacy of punitive damage awards (Kirsch 2020), comparable to the corporate strategy of promoting “doubt and uncertainty” about practices that are harmful to people and the environment (see Brandt 2007; Michaels 2008; Oreskes and Conway 2010).

¹⁰ Texaco rejected a settlement offer of \$141 million in 2001 (Kimmerling 2006: 640).

¹¹ The judge in the RICO case argued that the change was made because Donziger was confident he could ensure the choice of an expert who would “totally play ball” with the plaintiffs’ attorneys (Kaplan Opinion 2014: 72, citing notes subpoenaed from Donziger).

a judge *ex parte*, or outside the presence of opposing counsel. But in Ecuador at the time no such rules applied, making it difficult to monitor whether a judge had been subjected to improper influence.” But if Donziger was concerned about Chevron’s influence over the courts, the company also had cause to feel the same way about him.

Writing about the Chevron case in Ecuador, Maya Steinitz and Paul Gowder (2016) argue that perceptions of judicial corruption can produce a dynamic akin to the classic game theory model of the prisoner’s dilemma. The assumption that the judicial process is corrupt may provoke concerns that one’s counterpart may seek to gain an improper advantage by engaging in illegal behavior. This can lead both parties to feel compelled to outdo the other to prevail in the case. Decisions made by lawyers on both sides of the case were part of a larger set of calculations as to whether the case in Ecuador would be decided fairly.

DANGEROUS OUTTAKES

As the legal proceedings unfolded in Ecuador, Maest was filmed by the camera crew for what later became the documentary *Crude* (Berlinger et al. 2009). Two of the outtakes subpoenaed by Chevron provided critical evidence in the RICO case. The first scene depicted the legal and technical team working with the plaintiffs, including Donziger and Maest. Richard Cabrera, who was subsequently appointed as the independent expert in the case, was also present. As the camera rolled, Pablo Fajardo, the lead attorney for the case in Ecuador and Donziger’s local counterpart, explained how the process would work, telling his peers: “And here is where we do want the support of our entire technical team ... of experts, scientists, attorneys, political scientists, so that all of us will contribute to that report. In other words ... the work isn’t going to be the expert’s. All of us bear the burden” ([youtube.com/watch?v=JnXxpMsc1a4](https://www.youtube.com/watch?v=JnXxpMsc1a4)). Maest then asked whether “the final report is going to be prepared only by the expert?” Fajardo responded, “What the expert is going to do is state his criteria, alright? And sign ... the report and review it. But all of us, all together, we have to contribute to that report.” Maest then followed up with another question, “But ... not Chevron, right?” provoking widespread laughter, leading Maest to join in (*ibid.*).

The second scene took place at a lunch between Donziger, Maest, and two other members of the technical team in Ecuador. During a discussion about the presentation of the evidence, Maest noted, “All the reports are saying it’s [the contamination from petroleum] just at the pits and the stations and nothing has spread anywhere at all” ([youtube.com/watch?v=1N6SyeRUiw0](https://www.youtube.com/watch?v=1N6SyeRUiw0)). Donziger objected, arguing, “That’s not true. The reports are saying the groundwater is contaminated because we’ve taken samples from groundwater.” When Maest responded, “That’s just right under the pits,” Donziger replied with characteristic hyperbole that it did not matter whether they had evidence of groundwater contamination downstream from the pits, because what they will present to

the courts in Ecuador is “all just ... smoke and mirrors and bullshit,” although he concluded that they had sufficient evidence of pollution to receive a favorable judgment (*ibid.*).

The two video clips were used by Chevron’s legal team in the RICO proceedings to discredit Donziger and Maest, as well as the report prepared by Cabrera. The first clip was used to argue that the plaintiff’s lawyers and technical team had conspired to ghostwrite the independent expert’s report, known in Spanish as the *Peritaje Global*. The second clip was used to argue that there was insufficient evidence to prove the case against Texaco, and that the lawyers for the plaintiffs sought to conceal this fact.

But when Maest was deposed about the interactions depicted in the video clips, she presented alternative interpretations of both claims. When questioned about the first video clip, she insisted that she was trying to understand the procedure followed by independent experts in the Ecuadorian judicial system:

Lawyer: “When [Fajardo] said, ‘This work isn’t going to be the expert’s’, what did you understand that he meant?”

Maest: “Well, I don’t know what he meant. I don’t know... [H]e said that we were supporting the [independent] expert, and that was my understanding” (Maest Deposition 2010: 175–77).

Lawyer: “He says ‘Together’, and you said, ‘But not Chevron’. Why were you asking whether Chevron would be involved in the writing of the expert report?”

Maest: “Well, at that point ... I didn’t really understand the whole concept of the *Peritaje Global* (global expert report), so I was just trying to understand more about it” (*ibid.*: 179–80).

Lawyer: “So when you say up there [i.e., in the video clip]—and I’d asked you previously why you said, ‘but not Chevron’—you weren’t confused about the ... nonpresence of Chevron. You were trying to make a joke, weren’t you?”

Maest: “No.”

Lawyer: “Your testimony is that you were confused as to whether or not Chevron would be included in helping the expert write his report.”

Maest: “Yes” (*ibid.*: 184).

Maest’s testimony was in keeping with her defense of her contribution to the legal proceedings, including her denial that she helped write the Cabrera report: “I didn’t prepare it, and Stratus didn’t prepare it” (*ibid.*: 113). She explained the process in the following terms: “We prepared materials that we submitted to Steven

Donziger. And then my understanding is that he submitted those to [the plaintiffs' legal team in Ecuador], and they subsequently submitted those to Cabrera for his consideration" (ibid.: 113–14). Her expectation was that Cabrera would evaluate all of the submissions he received and decide whether to include the material in his final report. When asked, "Did you understand that the expert was supposed to be independent of the parties?" Maest responded, "Yes" (ibid.: 150).

Donziger was equally adamant that the interactions between the plaintiffs' legal team and the court-appointed expert were "fully consistent with Ecuadorian law and practice" (Gupta Brief 2014: 62). He argued that the legal system in Ecuador "permitted parties to create work plans and to draft materials for the experts to adopt as their own" (ibid.: 61). When asked why Chevron did not contribute to the court-appointed expert's report, Donziger asserted "both parties had an opportunity to submit materials to Cabrera, and the plaintiffs had properly availed themselves of that opportunity" (Kaplan Opinion 2014, 134), whereas Chevron had objected to the court's decision to appoint a single independent expert, and therefore declined to participate in the process (Donziger memo to "Fellow Counsel," cited in ibid.: 138).

When confronted by the claim that she had ghostwritten sections of the Cabrera report, Maest explained that her role in the case in Ecuador was consistent with previous consulting experiences in which she provided scientific reports to various parties. She makes this point clear in the following exchange with a lawyer during her deposition: "I do work for state and federal agencies that get[s] submitted under the state or federal agency name..." (Maest Deposition 2011b: 64–65). When asked, "And when you say that it's submitted—that your work is submitted under the state or federal agency name, does that mean that it doesn't have Stratus' name on it?" Maest responded: "Doesn't have—yes, that's right" (ibid.: 65). She explained that she routinely produces scientific analyses that are incorporated into larger reports released by other parties. These documents do not necessarily bear her name as the author or the name of the consulting company that employs her. This includes prior work for the U.S. Environmental Protection Agency and the state of New Mexico (ibid.: 65–66).

Maest was also asked whether her contribution to the Cabrera report violated the honor code at Princeton University, where she earned her Ph.D. Citing university regulations, the lawyer asked Maest, "When you walked out of the gates of Princeton, was there any reason why you thought you might be free to no longer govern your work by the highest standards of research and scholarship, you know, and avoid plagiarism, multiple submission, false citation, and use of false data?" [...] "Did you intend to carry yourself in that manner?" he continued (Maest Deposition 2010: 129). Maest's attorney objected, describing the line of questioning as "abusive and harassing." "I'd also note Counsel's voice is rising in level," he added (ibid.: 130). "No," Maest responded to the first question, about whether she no longer felt obligated to follow proper academic

standards (*ibid.*). The lawyer then focused on the question of plagiarism and claiming credit for someone else's work:

Lawyer: "So you still—you still abide by that? You still recognize that plagiarism's wrong in the scientific world?"

Maest: "Of course."

Lawyer: "And manipulating data would be wrong ... for a scientist?"

Maest: "That—that would be wrong."

Lawyer: "What about falsely citing work as your own when it was someone else's? Would that be wrong?"

Maest: "Yes" (*ibid.*: 130).

Finally, the lawyer asked Maest whether she was aware that one of the penalties for violating the code of ethics at Princeton was the revocation of a degree, not so obliquely threatening her (*ibid.*: 131). However, another series of objections derailed this line of questioning (*ibid.*: 132–37).

It was apparent from the exchange that the lawyer questioning Maest was operating according to a purely academic framing of scientific authorship (see Biagioli 1998). He failed to distinguish between the conventions for assigning credit for individual contributions to larger scientific reports in legal contexts and articles published in scientific journals. He also conflated ghostwriting and plagiarism, as Maest was not being criticized for taking credit for work undertaken by another author, but the reverse, of providing scientific analysis for inclusion within a larger and more comprehensive report for which she was not the author. There was no merit to the insinuation that Maest may have violated the honor code at Princeton because she was providing technical advice on a legal case, not publishing the results of her research in a scientific journal.

In response to questions about the second video clip, Maest insisted on the importance of scientific evidence:

Lawyer: "Did you agree with Mr. Donziger that what you were being called upon to do was just going to be 'smoke and mirrors and bullshit', or did you think that you had to provide actual science to show that there was contamination in the groundwater?"

Maest: "The latter" (Maest Deposition 2010: 209).

When asked to respond to an assertion by Donziger about the social construction of facts, Maest rejected the claim, noting the robust evidential basis of the case:

Lawyer: “Well, Mr. Donziger says, quote, ‘I once worked for a lawyer who said something I’ve never forgotten’. He said, ‘Facts do not exist. Facts are created’. And you smiled, laughed, and nodded. Do you agree with that statement?”

Maest: “That might be true in the law. It’s not true in science.”

Lawyer: “Well, is it true in this case?”

Maest: “Were the facts created?”

Lawyer: “Yes.”

Maest: “In this case? No. *There’s ample evidence. We didn’t need to make anything up*” (ibid.: 211–12; emphasis added).

In her response, Maest denies that the existing evidence was fabricated or insufficient to prove the case against Chevron. She did, however, request that “additional groundwater sampling be conducted but never received approval” from Donziger (Maest Witness Statement 2013: 4, para. 14). Even though there was an abundance of data indicating widespread soil contamination, and extensive evidence of surface and groundwater contamination close to the pits, further sampling was needed to determine what hydrologists and other scientists who study water pollution refer to as “fate and transport,” the behavior and movement of contaminants in an environmental medium, in this case the groundwater downstream from the pits. This information would have been especially valuable for the case given that polluted groundwater is much more difficult and expensive to clean up than surface water or soil contamination. Although plaintiffs’ lawyers routinely face financial constraints, influencing the data they are able to collect, Donziger missed an important opportunity to strengthen the case against Chevron, which is what Maest was trying to explain to him in their videotaped conversation.

COMPETING CLAIMS

There are substantial differences in the narratives presented by scientific experts for the opposing parties regarding the degree of contamination from Texaco’s petroleum operations and the need for cleanup. In his deposition, Douglas Beltman, who managed Stratus’ work on the case, noted that “samples collected by the plaintiffs tend to show higher contamination ... compared to Chevron samples” (Beltman Deposition 2011: 148). He offered two reasons for the discrepancy. “One is where they sampled. Chevron tended to collect samples that were away from the pits or away from the areas where the wells operated. Whereas the plaintiffs tended to collect [samples] close to the pits, sometimes right on the pits” (ibid.: 149). In a related exchange, one of the lawyers representing Chevron asked Maest whether the company’s experts conducted

“more extensive groundwater sampling at areas farther from the pits” than did experts working for the plaintiffs (Maest Deposition 2011b: 216). Maest replied, “It appeared from the sampling locations that Chevron did not collect samples in locations that would show groundwater contamination. It’s true that some of them are farther away [from the source of the contamination], but ... they were up gradient from the pits, so those [samples] would not show contamination from the pit” (ibid.: 217).¹²

The second reason for the disparate findings, according to Beltman, “is a difference in the analytical methods between the plaintiffs and Chevron” (Beltman Deposition 2011: 149; see Sawyer 2015). The standards for evaluating petroleum-contaminated soils in Ecuador are based on the measurement of TPH, or Total Petroleum Hydrocarbons. Petroleum contains several hundred different compounds, only some of which have proven to be harmful on their own. Any specific sample of oil contains a subset of these compounds. However, TPH is the standard used to measure the contamination of soil by petroleum in most jurisdictions in the United States rather than measurements of the individual compounds of petroleum, although many jurisdictions have an independent standard for benzene in water. The accepted standard in Ecuador for the presence of TPH in soils is 2,500 parts per million (ppm), although the appropriate level for sensitive areas of the country like Yasuni national park is 1,000 ppm. In the United States, TPH standards vary by state, although in some cases, the more stringent standard of 100 ppm is applied when cleaning up contaminated soil after an oil spill. Beltman noted that of the eighty-one well sites sampled, all had at least one soil sample with a TPH level higher than 100 ppm (Beltman Deposition 2011: 140). Of these samples, 98 percent, or all but one or two, had a TPH level greater than 1,000 ppm (ibid.: 140).

In contrast, experts for Chevron found that no TPH was detected in soils at multiple sites (Beltman Deposition 2011: 163) and reported much lower levels of TPH across the board than what was detected by scientists consulting for the plaintiffs. They reached these conclusions by employing a test that only measured the medium and lighter weight components of oil, which are more likely to evaporate over time. Their justification for this practice was that the heavy components of oil solidify over time, becoming largely inert (World Bank Arbitration 2015: 279). Experts for Chevron compared the dried-out material to asphalt, suggesting that it is harmless (ibid.: 1792). But more importantly, they argued that any oil found in liquid form in the Oriente could not have come from the Texaco operations, which concluded in 1992 (ibid.: 279). However, the weathering of the heavier components of oil occurs primarily at the edges of

¹² Maest added that some of these soil samples “were apparently [intended as] background samples” (Maest Deposition 2011b: 217).

the pits, where it can dry out (see *ibid.*: 279). A lawyer representing the Republic of Ecuador argued in an arbitration hearing that if the oil was not directly exposed to the elements, “it will remain as it came out of the ground, a liquid” (*ibid.*: 279), which is consistent with reports based on observations at former Texaco well sites and pits.

Consequently, Beltman argued that the methods employed by the scientists working for Chevron “didn’t capture all of the contamination in the soil” (Beltman Deposition 2011: 150). “To analyze the soil and compare it to the 1,000 milligram per kilogram standard in Ecuador or any standard or guideline based on TPH, not measuring the heavy components of oil is incorrect, in my opinion,” Beltman added (*ibid.*: 152). Had Chevron tested for the heavier oil products, the number of samples indicating the presence of TPH at 1,000 ppm would have increased (*ibid.*: 153).

The two sides also disagreed as to whether the contaminants found in the environment should be attributed to Texaco or Petroecuador, which continued to operate in the region after Texaco left the country in 1992. Experts for Chevron argued that very little of the petroleum contamination in the region can be attributed to Texaco’s operations. However, Beltman challenged this claim in his testimony. He noted, “most of the contamination ... at these wells is going to happen during the initial drilling and development of the well, to get it started in the first place” (*ibid.*: 171). “When Petroecuador took over the field,” he continued, “the documents I’ve read show that they made several kinds of improvements. One we mentioned previously is that they reinjected all produced water deep underground as opposed to Texaco dumping it into the streams and rivers” (*ibid.*: 173). Petroecuador also used “on-site tanks to handle the waste rather than the open pits that Texaco used” (*ibid.*). The contents of the tanks were then properly disposed of. In addition, Petroecuador “initiated programs to detect oil spills—this would be primarily from pipelines—and respond to them and clean them up” (*ibid.*).¹³ Beltman also presented data showing that virtually “every site operated by Texaco and then shut down *prior* to Petroecuador taking over was contaminated” (*ibid.*: 175, *emphasis added*). This was the linchpin in the scientific evidence against Chevron, because breaking out the sites where only Texaco operated oil wells showed that they had been contaminated by the company and suggests that most or all of the sites where Petroecuador continued to operate would also have previously been contaminated by Texaco’s operations.

Instead of measuring Total Petroleum Hydrocarbons (TPH) in soil samples, scientific experts working for Chevron used a method known as “Toxicity Characteristic Leaching Procedure” (TCLP) to “determine whether a cleanup

¹³ Although it is clear from other sources that oil spills have continued to occur under Petroecuador (see Cepek 2018).

was successful or whether additional cleanup work was necessary” (Beltman Deposition 2011: 273–74). Beltman was critical of this method, explaining,

...the TCLP test is not a measure of the petroleum content in soil. So if the objective is to determine whether a cleanup has successfully removed petroleum contamination from soil, it is inappropriate. What the TCLP test does measure is contaminants that leach out of soil when soil is taken back to the laboratory and subjected to specific conditions. The standard that was applied was 1,000 milligrams of TPH per liter of water ... [a]nd that standard is inappropriate because it is impossible for this oil and these contaminated soils to ever exceed a thousand milligrams per liter of TPH in a TCLP test (ibid.: 274–75).¹⁴

According to Beltman’s testimony, even a soil sample completely saturated in oil would not result in a TPH level greater than 1,000 ppm using a TCLP test. In notes subpoenaed by the court, Maest described Chevron’s use of the TCLP test as a “ruse to get around” the TPH standard (Maest Deposition 2011a: 236). She subsequently explained that “in the United States there are no TCLP standards for total petroleum hydrocarbons, and there are problems with the analysis of total petroleum hydrocarbons in a TCLP test” (ibid.: 236).

SCIENTIFIC GHOSTWRITING

It is instructive to compare the discussion about ghostwriting in the Chevron case with the example of medical ghostwriting in the pharmaceutical industry, in which established authors publish, under their own names, articles that have been commissioned by drug companies and prepared by science writers. It has been estimated that “up to 40% of important journal reports of clinical trials of new drugs” are produced by ghostwriters (Sismondo 2009: 172; see Bosch 2011).

Medical ghostwriting facilitates selective promotion of results from clinical trials. Pharmaceutical companies use ghostwritten texts to amplify positive results by publishing them multiple times, while downplaying or failing to publish results that are ambiguous or negative (Angell 2005). Such publications may result in legal liabilities if the harmful side-effects of medications are concealed or insufficiently addressed. Adriane Fugh-Berman (2010) and Sergio Sismondo (2009) describe how specialized vendors known as contract research organizations offer “publication planning” services to pharmaceutical companies that include ghostwritten meeting presentations, editorials, drug promotions, and journal articles. Sismondo refers to these practices as “a new

¹⁴ One milligram per liter is equivalent to one part per million.

kind of corporate science” that is “designed to look like traditional academic work, but performed largely to market products” (ibid.: 171).¹⁵ Although academic reforms that require disclosure of potential conflicts of interest, including the publication of articles prepared by ghostwriters, are intended to eliminate these practices, they have not been entirely successful in doing so.

But there are important differences between scientific ghostwriting in the pharmaceutical industry and Ann Maest’s involvement in the case against Chevron. Scientific knowledge production that takes place outside of the academy is subject to different rules and conventions concerning authorship. As Maest indicates in her depositions, scientific consultants regularly produce work on behalf of their clients that is incorporated into larger reports that do not necessarily acknowledge their individual contributions. Under U.S. copyright law, such arrangements are known as “work for hire,” and the employer who commissioned the work is the legally recognized author rather than the person who produced the work. These work products may be released to the public under the aegis of the government agency or other body that sponsors the research without identifying the individual contributors. If evaluated by the standards for publication in scientific journals, however, these practices might be judged as ghostwriting, with the associated connotations of impropriety, even when they follow the informal norms of scientific consulting, the definition of “work for hire” under U.S. copyright statutes, and the formal style sheets provided by the employer, and thus adhere to both legal standards and contextually appropriate understandings of propriety.

As Mario Biagioli (2012: 454) observes in relation to scientific writing, “authorship constructs [are] established not [only] by legal statute but through professional and sociocultural conventions.” However, he also notes that even though scientific texts are often composed “of very different sections that ... reflect different levels of authorial agency, labor, and originality ... this is not how investigators and agencies involved in defining and prosecuting scientific misconduct typically see things” (ibid.: 459). Judging work produced for hire against the standards upheld in academic settings ignores the extent to which the conventions of scientific authorship vary according to the context. Yet such assessments were used as the basis for criticism of Maest and her colleagues, as well as for exposing them to legal jeopardy and pressuring them to retract their scientific contributions to the case. They were also used to discredit the judgment against Chevron in Ecuador.

Biagioli (1998) also describes the difference between the status economy of universities, in which authorship is converted into recognition and prestige, and market economies that offer authors financial rewards for their creative work.

¹⁵ Elsewhere I describe how corporate science exhibits biases that consistently favor the interests of the organization sponsoring the research (Kirsch 2014: 127–58). These practices are intrinsic to contemporary capitalism rather than restricted to specific corporations or industries (ibid.: 156).

The gap between the two narrowed somewhat during the 1980s as a result of efforts by the U.S. government and universities to monetize academic research (Krimsky 2003). However, the commercialization of intellectual property can be distinguished from the indirect rewards that accrue from research activities and publication by university faculty, including academic positions and promotions, awards, invitations, and higher salaries (Biagioli 1998; 2000). The distinction is also evident in the example of scientific ghostwriting in the pharmaceutical industry, in which science writers are paid for writing articles but the authors who publish them under their own names do so for academic credit rather than monetary remuneration (Fugh-Berman 2010: 2).

But Maest's contribution to the case against Chevron does not fit neatly into either category. She was engaged as a scientific consultant because of her experience producing accurate assessments of the environmental impacts of extractive industry, which are regularly ignored, downplayed, or even actively concealed (Kirsch 2014). Maest and her colleagues analyzed thousands of samples collected for the case and reported on the results. Much of this work involved generating maps and graphs showing the concentrations of pollutants in samples taken from the areas surrounding Texaco's oil wells. The only separate document that Maest contributed to the case was a six-page analysis of data quality. It is a category error to compare her contribution to the legal proceedings against Chevron to a scientific research article published in an academic journal under another author's name.

Maest and her colleagues also sought to challenge the scientific methods employed and conclusions drawn by the scientific experts engaged by Chevron, who repeatedly sought to make evidence of the contamination disappear completely—whether by collecting samples from locations that would not be affected by oil spills, by excluding the heavier components of petroleum in their analyses, or by applying inappropriate methods for measuring the level and type of contamination in soil samples. Whereas the pharmaceutical industry uses ghostwriting to conceal the potentially harmful consequences of its products, Maest's work on the Chevron case was intended to do the opposite, to make visible the impact of the company's operations on the people and the environment in the Oriente.

Throughout her career, Maest has been involved in one contentious case after another, writing multiple reports about which there was a strong public interest in fully understanding the environmental impacts of extractive industry, in contrast to the way corporations routinely deny that such problems exist or that they have any responsibility for their mitigation (Benson and Kirsch 2010; Kirsch 2014). In this sense, her motivation was quite different from that of ghostwriters for the pharmaceutical industry, whose primary interest in the process is financial. If there is any comparison to be made, it is between the science writers employed by the pharmaceutical industry to market their products and the scientific consultants employed by Chevron to help the

company minimize its liabilities for pollution in Ecuador. In contrast to either of these examples, Maest's involvement in the lawsuit was not simply an economic transaction. As she noted, there is not a great deal of financial support available for scientific researchers to write critically about the environmental impacts of extractive industry. Instead, her experiences as an environmental consultant demonstrate her commitment to accurately assess the impacts of mining and petroleum projects on water resources. Yet in the RICO proceedings, her work was unfairly judged against academic standards that govern authorship and publication of articles in scientific journals, which differ significantly from the rules and procedures associated with work undertaken by environmental consultants and expert witnesses.

This does not entirely negate the complaint by Chevron's lawyers that lengthy scientific analyses conducted by Stratus were incorporated verbatim in the independent expert's report without attribution. However, it is fair to say, as Simon Stern (2013) observes, that jurisprudence has a "copying problem" of its own. He describes how judicial opinions regularly incorporate large blocks of text that have been reproduced verbatim from other sources without providing proper attribution. When judges liberally borrow text from other legal judgments, the familiarity of the text often inspires confidence. This is because novelty and creativity are not as highly prized in judicial writing as they are in academic publications; the legal value of precedent discourages innovation. The lack of judicial originality is regarded as more troubling when the text in question relies heavily on the submissions from one of the parties to the case but not the other, which raises questions about judicial independence. The courts have generally ruled that the occurrence of extensive, unattributed borrowing from other sources should not invalidate the judgments themselves, provided that the material is accurate and appropriate. Instead, "it is the plagiarized author rather than the losing party who is seen as suffering a harm" (ibid.: 416). Although Stern is describing examples of judicial plagiarism rather than accusations of scientific ghostwriting, one might ask whether the common practice of judicial copying ought to have been the standard of evaluation in relation to the Cabrera report rather than the comparison to academic writing.

JUDGMENT DAY

In response to the legal complaint about ghostwriting in the RICO case, Donziger initially acknowledged that "some small analyses provided by the parties through regular court procedures were adopted by Cabrera after his own independent assessment determined they were technically sound and consistent with the evidence" (cited in Kaplan Opinion 2014: 133). "Nothing improper happened," Donziger asserted (Donziger memo to "Fellow Counsel," cited in ibid.: 138). "The information in the Cabrera report is sound, and is consistent with the high quality of work that Stratus has done as a world

class environmental consultancy” (Donziger memo to “Fellow Counsel” cited in *ibid.*: 133).

In keeping with these assertions, Maest steadfastly denied that she or Stratus were responsible for ghostwriting the report submitted by the independent expert: “We didn’t write the Cabrera report.... The Cabrera report, I believe, was 4,000 pages. The information that Stratus prepared and that ultimately ended up in the Cabrera report, I don’t know if it was verbatim or not ... was only a small portion of that. So I would not agree at all that we wrote the Cabrera report” (Maest Deposition 2011b: 180). But when the independent expert’s report was analyzed, it was evident that the contents had been heavily influenced by the consultants at Stratus and other scientists working for the plaintiffs’ attorneys. A number of the documents produced by Stratus were incorporated verbatim into Cabrera’s report. This included eleven of the twenty-four scientific annexes (Beltman Witness Statement 2013: 8, para. 22). Donziger and Fajardo instructed Beltman to assign authorship credit for the annexes to experts who were not affiliated with Stratus or working with the plaintiffs in Ecuador (*ibid.*: 10, para. 27). The introduction to the report had been written in the first person and translated into Spanish for the independent expert to sign and submit as his own work (Kaplan Opinion 2014: 107), a compelling detail in relation to the complaint about ghostwriting. In many respects, the directions of Donziger and Fajardo on attributing authorship for the annexes to third parties and submitting documents to the independent expert for review resemble the process of “publication planning” undertaken by contract research organizations working for the pharmaceutical industry (see Sismondo 2009). In correspondence with his attorney for the RICO case, Donziger acknowledged that the plaintiffs’ legal and technical team had provided “approximately 3,000-plus pages of documents” that were incorporated into the 4,000-page Cabrera report (cited in Kaplan Opinion 2014: 134).

The judge in the RICO case in the U.S. District Court for the Southern District of New York, Lewis A. Kaplan, sharply criticized Donziger for his contribution to the Cabrera report: “Yes, lawyers work with their own experts, both here [in the United States] and probably in Ecuador. That is accepted because everyone knows that party-nominated experts are selected and paid by their clients. That built-in bias is above board and considered in evaluating the testimony of party-paid experts. But Cabrera was a court-appointed expert, sworn to be independent and impartial. And Donziger fully understood that Cabrera was neither independent nor impartial” (*ibid.*: 139). “Moreover,” Kaplan continued, “it was Donziger who decided to ghostwrite the Cabrera report using his own paid consultants and to hide and misrepresent the facts concerning the ... relationship” between Cabrera, Stratus, and the plaintiffs’ attorneys (*ibid.*: 140). Even though Donziger insisted that their conduct was permissible in Ecuador, one of the lawyers he worked with in Ecuador foresaw “potentially devastating” consequences if their activities were made public:

“apart from destroying the proceedings, all of us, your attorneys, might go to jail” (email from J. Prieto to Donziger, Fajardo, and others, 30 Mar. 2010, cited in *ibid.*: 140).

Based on evidence assembled by investigators employed by Chevron, Donziger, Maest, and Beltman were sued in the U.S. District Court for the Southern District of New York. Under pressure, Maest and Beltman withdrew their support for the Cabrera report in return for Chevron retracting its complaint against them (Krauss 2013). In a witness statement provided by Maest, she concluded by stating: “I now believe that the damages assessment in the report ... is tainted [as a result of revelations about the extent of Donziger’s influence]. Therefore, I disavow any and all findings and conclusions in all of my reports and testimony on the Ecuador project” (Maest Witness Statement 2013: 16, para. 50).

In his decision in the RICO case, Kaplan emphatically concluded: “The ends do not justify the means” and “justice is not served by inflicting injustice” (Kaplan Opinion 2014: 5). However, he made it clear that his findings pertained to the conduct of the case rather than the question of environmental impacts: “The Court assumes that there is pollution in the Oriente” (*ibid.*: 4). Invoking comments made by Jeffrey Shinder, who withdrew his legal representation of Donziger after learning of the extent to which he had influenced the Cabrera report, the judge in the RICO proceedings opined: “The saga of the [Chevron] case is sad” in that, as a result of Donziger’s misconduct, “We’ll never know whether or not there was a case to be made against Chevron” (*ibid.*: 484). However, his expression of regret that the truth may never be known about the extent of Chevron’s liability for the pollution was not matched by an equivalent level of concern for the exposure of the people living in the Amazon to slow violence.

The RICO decision against Donziger in 2014 blocked payment of the \$9 billion judgment in Ecuador (*ibid.*).¹⁶ This occurred even though Chevron’s appeal of the original judgment in the Ecuadorian courts resulted in a review of the evidence in 2011 by a panel of three judges that ended up reaffirming the original decision (Gupta Brief 2014: 38–39). Their conclusion was reached independently of the controversial Cabrera report, which was purposefully excluded from their deliberations (*ibid.*: 39). Subsequent rulings in multiple international jurisdictions, including Canada, Argentina, and Brazil, used Kaplan’s opinion to block Donziger’s efforts to enforce payment of the original judgment outside of Ecuador, where Chevron no longer has assets (*ibid.*: 44). As a result, Chevron has avoided accountability for the damages caused by Texaco’s oil operations apart from the initial cleanup costs.

¹⁶ The judgment was doubled to \$18 billion after Chevron’s refusal to pay but was reduced to the original \$9 billion after an appeal.

Given that the company had agreed to abide by the findings of the court in Ecuador when it requested that the initial case be transferred from the U.S. District Court in Southern New York (Kimmerling 2006: 514), a finding that the judgment in Ecuador was fraudulent was the only way to avoid payment. But it was not enough for Chevron to raise procedural questions about judicial impropriety in Ecuador. The company also sought to undermine confidence in the legal decision by attacking the scientific experts for the plaintiffs rather than their data. It is important to note that no evidence of scientific errors or invalid conclusions was presented by Chevron in these proceedings. This corporate strategy may ultimately have a chilling effect on the willingness of environmental scientists and other expert witnesses to provide evidence against powerful corporations.

CONCLUSION

To paraphrase Foucault, one might ask: “What kind of an author is a scientific consultant or expert witness?” The figure of the environmental consultant was largely misconstrued in these legal discussions. This may not be entirely surprising given that the academy is the paradigmatic context for scientific research. This is equally true for scholarship in science and technology studies and the history of science. Yet a considerable proportion of scientific research takes place outside of universities, including work by consultants and experts in legal cases. As this discussion about claims of ghostwriting in the Amazon suggests, there is a need for better accounting of scientific research undertaken in support of environmental litigation, especially given the high stakes of legal contests like the one discussed here, in which corporate fortunes, human lives, and the fate of the environment are contingent on the technical work of these individuals.

This includes the contribution of independent experts who take their commitment to scientific integrity too seriously to have their work dismissed as partisan. Their scientific responsibilities may also lead them to provide robust counternarratives to the methods and conclusions of their corporate counterparts. It is also important to acknowledge the power differences that influence these interactions, including the recognition that it will always be exceedingly difficult to prevail in lawsuits like the one against Chevron. Litigation against corporate interests requires an aggressive approach without which even the most basic facts of the matter are unlikely to see the light of day. This includes circumstances in which there is overwhelming evidence of harm.

Closer examination of the role of experts in environmental litigation, including their commitments to set the scientific record straight, the constraints imposed by the legal proceedings in which they participate, and the decisions made by the lawyers in these cases, can advance our understanding of the contributions made by scientists conducting research outside of academic

contexts. Treating court transcripts, depositions, and other legal documents as examples of life writing provides insight into the factors that influence scientific judgment during the litigation of environmental matters. Comparative analysis of examples of ghostwriting also points to the underexamined differences not only between scientific ghostwriting in the pharmaceutical industry and legal complaints about ghostwriting in the Chevron case but also between the conventions of scientific authorship within and beyond the academy. Greater attention to these interactions is needed to enhance our understanding of the internal dynamics of environmental litigation. It is also central to the imagination and achievement of other, more just outcomes.

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Abstract: In 2011, lawyers for the Chevron Corporation filed a civil suit against an aqueous geochemist under federal racketeering and corruption laws. They claimed that the geochemist and her colleagues had ghostwritten significant portions of a report attributed to a court-appointed expert in Ecuador, although the accusation was subsequently withdrawn. The original case addressed the environmental impact of Chevron's operations in lowland Ecuador, the subject of a \$9 billion judgment against the oil company. This article treats legal transcripts and depositions as examples of life writing to examine the contribution of experts to environmental litigation. It adds to recent scholarship on the instability of scientific authorship by comparing different forms of ghostwriting. Whereas the pharmaceutical industry employs ghostwriters to conceal the potentially harmful consequences of its products, the scientists contributing to the case against Chevron sought to make the company's environmental impacts visible. The company undermined confidence in the legal proceedings in Ecuador by criticizing the experts for the plaintiffs rather than their data, preventing people whose lives and livelihoods have been affected by oil contamination from collecting the judgment against Chevron. This corporate strategy may have a chilling effect on the willingness of environmental scientists and other expert witnesses to provide evidence against powerful corporations. There is a need for better accounting of scientific research undertaken in support of environmental litigation, especially given the high stakes of legal contests like this one, in which corporate fortunes, human lives, and the fate of the environment are contingent on their technical expertise.

Key words: authorship, corporate strategy, environment, expert witness, ghostwriting, life writing, litigation, petroleum, plagiarism, pollution, science and technology studies