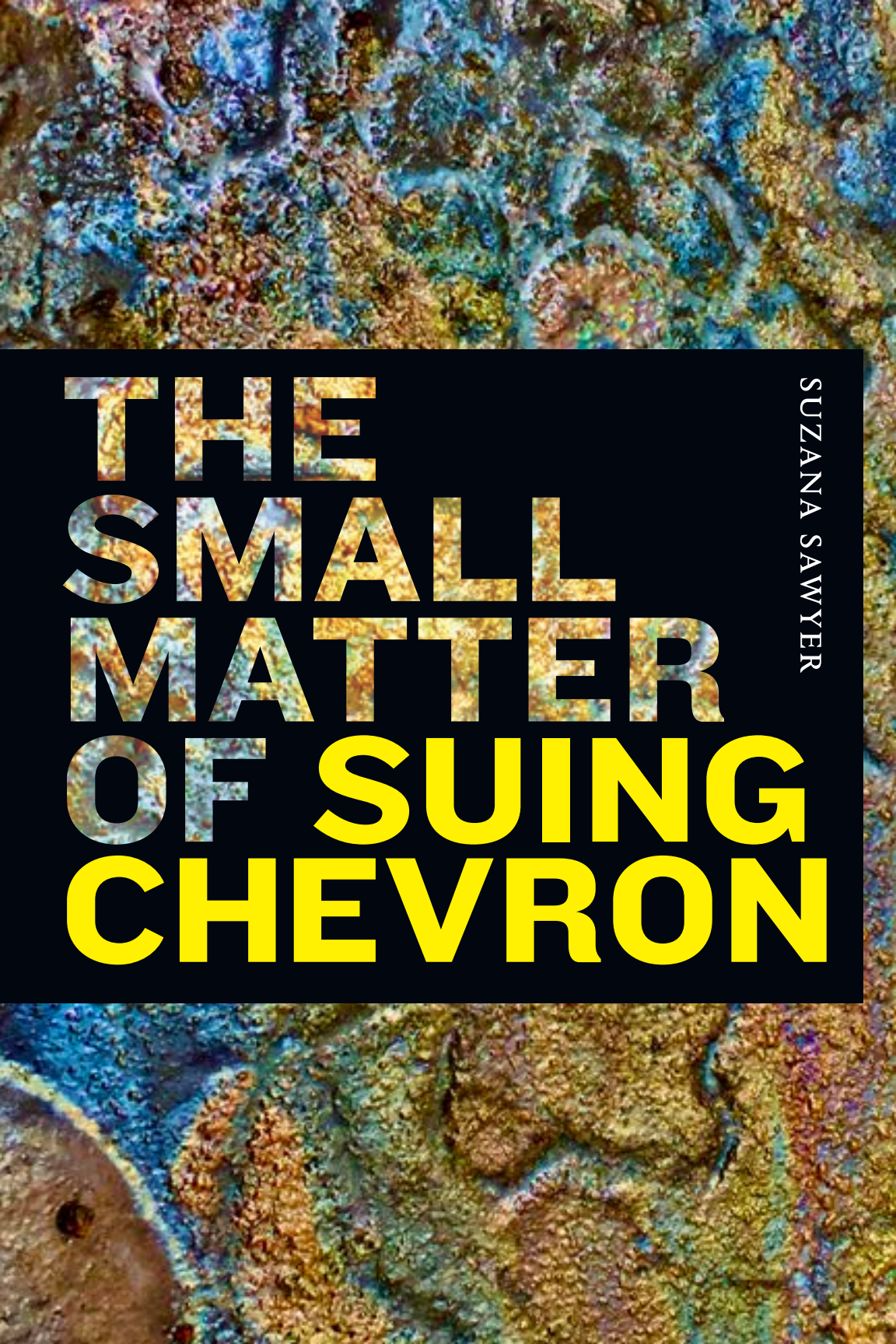
THE SMALL MATTER OF SUING CHEVRON
SUZANA SAWYER

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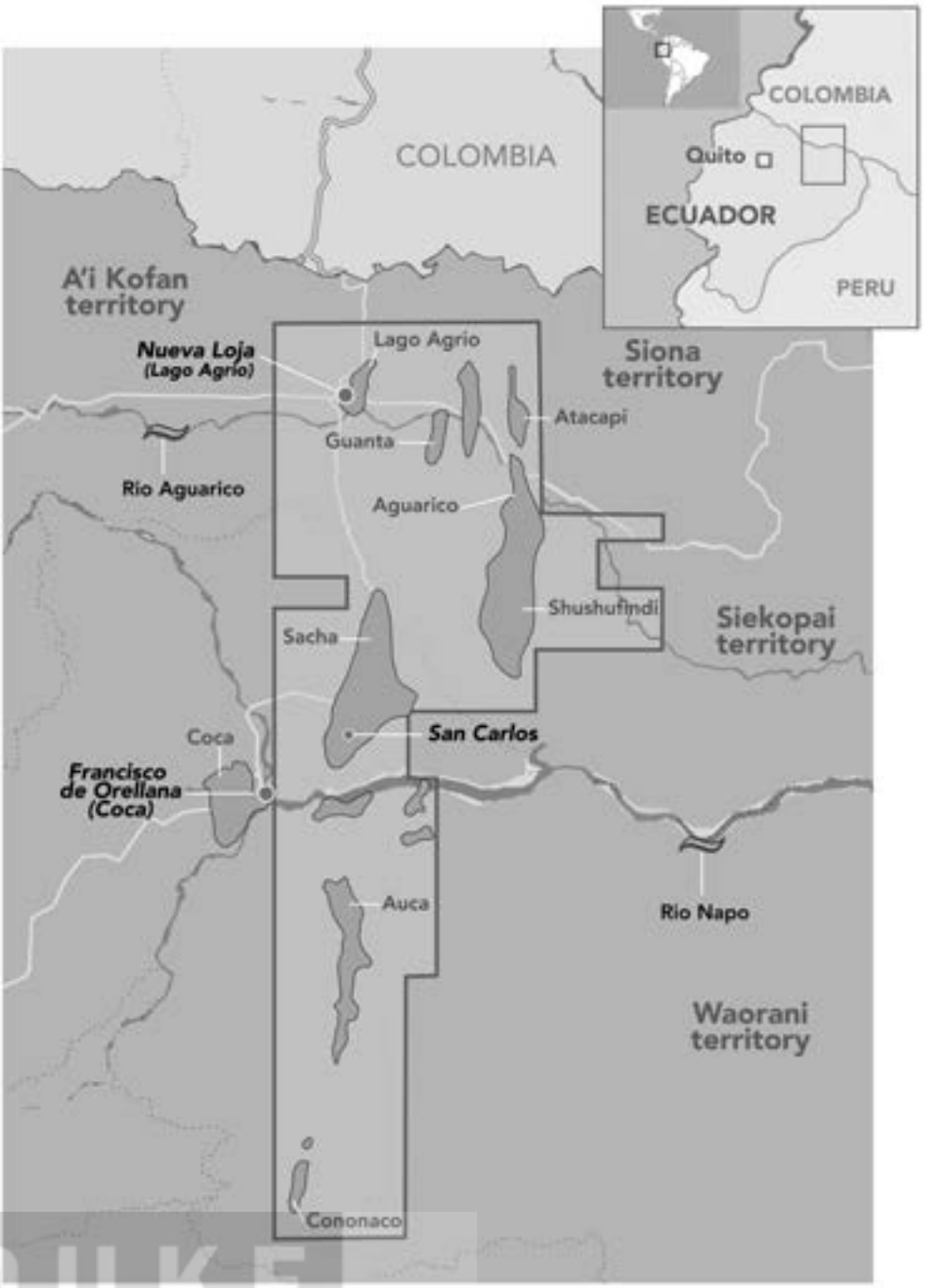
FOR ZOË . . .
my expanding pluriverse.

In nova fert animus mutatas dicere formas / corpora.
—P. OVIDUS NASO (8 AD), *Metamorphoses*

Of shapes transformde to bodies straunge, I purpose to entreate.
—Translation by ARTHUR GOLDING (1567)

Texaco's oil concession in the Ecuadorian Amazon. Compiled from © 2021 Google Maps.



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legal harassment, Steven has always shared with bigheartedness and humanity. It is my hope that this book (along with collaborative work with Lindsay Ofrias) reveals the corporation's legal campaign against Steven to be the unwarranted distraction it is and redirects scrutiny to Chevron.

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FRAUD

There is a video on the Chevron Corporation's website titled "The 'Legal Fraud of the Century' in 3 Minutes." It opens with an image of Steven Donziger, a longtime US advisory lawyer for Ecuadorian plaintiffs who, at the turn of the twenty-first century, had sued Chevron for contamination.[1] Seated with him are scientists who served as experts during the 2003–11 litigation against Chevron in Ecuador (figure 1).

FIGURE 1

Against gripping music, Steven's words sound: "Facts do not exist. Facts are created." One expert laughs. Across the screen in red letters emerges the word *FRAUD*. Next, *BRIBERY* is stamped on three still images—that of a scien-

tific expert and of two former judges who had presided over the lawsuit. The photograph in the center is of Nicolás Zambrano, the Ecuadorian judge who found Chevron liable for $9 billion in February 2011 (figure 2).

FIGURE 2

Skillfully produced, over the next few minutes the video splices together a compelling cascade of "wrongdoing" in the Ecuadorian legal proceedings against Chevron. "Defending itself against false allegations" that the corporation was "responsible for alleged environmental and social harms in the Amazon region of Ecuador," Chevron countersued in the United States.[2] In 2014, the US District Court for the Southern District of New York "found [that] Donziger violated racketeering laws committing mail and wire fraud, money laundering, witness tampering, and obstruction of justice [in suing the corporation]. . . . Steven Donziger thought he was going to get rich by suing a big oil company" (figure 3). With a tinge of bravado, the final sentence

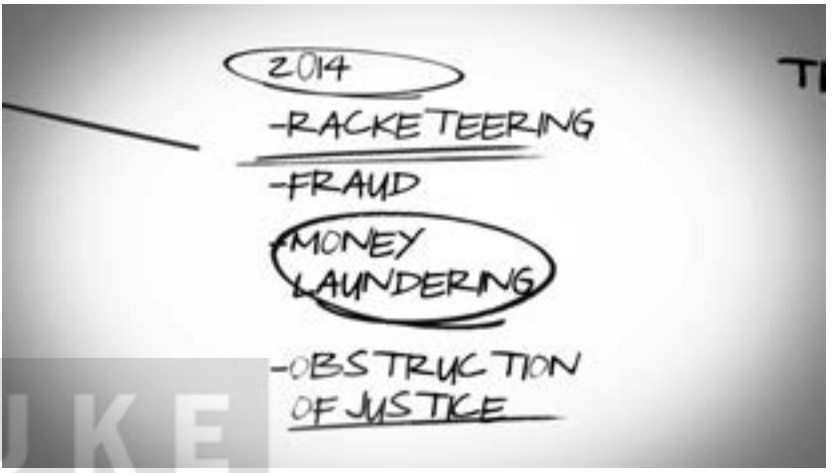

FIGURE 3

affirms: "But in the end, the US court's decision helped expose the fraud, the bribery, and most importantly, the *truth*."

In 2016, the US Court of Appeals for the Second Circuit upheld that "truth," and in 2018, under separate legal proceedings, the Permanent Court of Arbitration in The Hague did the same. Both judicial assemblies enacted a spectacular metamorphosis. The US court transformed a contamination lawsuit into a racketeering scheme, displacing attention onto a sole US lawyer. The Permanent Court of Arbitration transformed a contamination lawsuit into the breaching of a bilateral investment treaty and thus displaced liability onto the Republic of Ecuador. Codified in law, Chevron's fraud-of-the-century truth delegitimized a seven-plus-year litigation in Ecuador and a sovereign nation's judiciary. It made clear that neither should be taken seriously. *The Small Matter of Suing Chevron* intervenes to do precisely that.

Opening

Crude's Valence of Truths

Coalescence I

RENDERING TRUTHS

In 2004, the lawyers representing Ecuadorian *campesinos* (small farmers) and *indígenas* (Indigenous people) and the lawyers representing the Chevron Corporation followed the president of the Superior Court of Justice of Nueva Loja along a rivulet and down a precipice. Close behind were a court clerk, supporting counsel, technical experts, and local residents. The legal delegations stopped at the base of the ravine. Technical teams drove augers into and extracted samples from the swampy soils. And as the collective toured the site over the next day, lawyers expounded legal arguments on the presence or nonpresence of contamination, on the occurrence or nonoccurrence of cancer clusters, on the effectiveness or noneffectiveness of prior remediation, and on the existence or nonexistence of legal liability.

The legal entourage was in the midst of litigating a lawsuit against Chevron for Texaco's allegedly shoddy oil operations. Filed on behalf of thirty thousand Ecuadorian peasants and indígenas, the lawsuit alleged that Texaco (which had merged with Chevron in 2001) had used substandard technology to explore for and exploit hydrocarbons in Ecuador, and that this technology, in turn, systematically polluted the environment and endangered the health of local people. This was the first of over one hundred slated judicial inspections of former Texaco oil installations from which contamination allegedly

seeped as a result of the company's operations between 1964 and 1990. In this, as with the other fifty-four judicial inspections that actually transpired during the litigation, legal teams disputed whether the crude oil visible in soils, embedded in sediments, and glistening on water was toxic. They disputed whether illness and poor health experienced by people living near oil facilities were the result of Texaco's activities. They disputed whether a remediation project undertaken by Texaco nearly a decade earlier was a sham. And they disputed whether a layered corporate subsidiary structure and previous state-corporate contracts shielded Chevron from liability.

In February 2011, after seven years of litigation, the president of the single-chamber court in Lago Agrio, a then rough and bustling Amazonian town, rendered a precedent-setting ruling. Judge Nicolás Zambrano found the Chevron Corporation responsible for polluting sizable tracts of the Ecuadorian Amazon and harming public health. He ordered that Chevron pay $8.646 billion in damages, monies to be used for "reparation measures": a sum soon increased to $9.5 billion to compensate the legal team.[1] Environmental justice movements around the world celebrated. The $9 billion fine made it the then largest ever to emerge from environmental litigation in history. And, for a while, the lawsuit was emblematic of the rapacious exploits of an arrogant oil company and the stalwart integrity of Indigenous, peasant, and green opposition.

On the eve of the 2011 Ecuadorian ruling, however, Chevron cried foul and filed a countersuit in a US district court. In March 2014, that court found that the Ecuadorian ruling had been procured through fraud, and the court placed an injunction on the ruling's enforceability in the United States.[2] Two years later, in August 2016, the US Court of Appeals for the Second Circuit upheld that ruling.[3] Concomitantly, in 2009, Chevron filed another legal claim with the Permanent Court of Arbitration (PCA) in The Hague against the Republic of Ecuador. In September 2018, the PCA's tribunal rendered its decision; in line with the US court, the tribunal determined that the republic had violated both justice and the US-Ecuador Bilateral Investment Treaty in upholding the Lago Agrio ruling. Irrespective of these actions by the US court and the investment tribunal, the 2011 Amazonian judgment against Chevron still stands—as it will into perpetuity.

Within the United States (and increasingly around the world), Chevron's legal-fraud worlding has succeeded in making "corruption" *the* optic through which to view the Ecuadorian litigation and judiciary. This worlding transmogrified an environmental contamination claim into a fraud and racketeering scheme (in the US counterlitigation), and then transmogrified it again

into an international judicial and treaty violation (in the European counter-litigation). This successful deployment of "corruption" has had two primary effects. First, by branding the Ecuadorian lawsuit as fraudulent, it instructs that the Amazonian litigation need not be taken seriously. Second, by displacing questions of corporate wrongdoing, the "corruption" verdicts obscure the Amazonian litigation's far-reaching significance for transnational jurisprudence and environmental accountability. That the corruption optic seeks to foreclose further scrutiny is precisely why careful attention to how we reconcile challenging socioecological controversies—as well as make sense of formidable corporate adversaries—is called for. *The Small Matter of Suing Chevron* seeks to intervene toward that end.[4]

So how did it happen? How did an Ecuadorian judge assigned to a courthouse in a city that started as a "jungle oil-camp," and still reeked, forgotten by twentieth-century petroempires, render a decision against Chevron, the second largest oil conglomerate in the United States and the fourth largest private petroleum company in the world? Rarely do complaints of contamination in marginalized places reach a court of law, let alone get litigated, much less prevail.[5] These litigations are not easy, often becoming spectacularly protracted. And how was it that after presiding over a seven-week bench trial, a US federal court judge delegitimized that decision three years later? A decision upheld on appeal by Ecuador's provincial Appeal Division, National Court of Justice, and Constitutional Court. Indígenas, campesinos, their lawyers, and their experts never imagined that corporate retaliation would condemn them to the underworld of mob extortion. And how was it possible—even after a decade of arbitration generated tomes of evidence supporting the Ecuadorian judgment—that an international tribunal ruled in concert with the US court's delegitimizing opinion and denounced the judgment internationally?

The Small Matter of Suing Chevron examines the processes that led to the precedent-setting Lago Agrio ruling and its tumultuous aftermath. Undoubtedly, the lawsuit in Ecuador—together with its New York pretrial hearings (from 1993 to 2002) and its countersuits in the same US federal court (from 2011 to 2016) and the PCA (from 2009 to 2018)—bears witness to daunting (at times debilitating) corporate opposition.[6] That Chevron has unleashed formidable legal defenses on both sides of the equator, as well as the Atlantic, is an understatement.

But the significance of the core litigation in Ecuador (2003–11) rests beyond the fact that, despite all, it found a multinational corporation guilty of negligence. The Ecuadorian litigation and the legal snarls that followed are

momentous because they reflect how truths are legally scientifically made and also legally scientifically unmade. In Ecuador, the actual litigation from 2003 to 2011 intriguingly forged an inclusive, grounded, and experiential judicial assembly through which to address the scientific, technical, and legal controversies that too often mire contamination disputes. In the subsequent US forums, not only did the countersuit foreclose the possibility of such a judicial assembly, but also US legal procedures misattributed and demeaned the Ecuadorian judicial process and its radically different form. In good part, this was accomplished through Chevron's prodigious and fierce legal countercampaign, launched in the United States precisely when its prospects in Ecuador were not looking great. Yet it was also enacted through courtroom protocol and procedures. Held privately behind closed doors, Chevron's international arbitration further foreclosed possibilities of an inclusive judicial assembly. In late 2018, the PCA's tribunal not only embraced the ruling on the US federal court, but also significantly extended that opinion.

The Small Matter of Suing Chevron suggests that there is much to learn from these legal processes about crude's valence of truths—by which I mean the relational compositions through which truths are brought forth and consolidated. In the ruling of courts of law—in their *juris dictio*, that "language that speaks its performative authority into existence" and "simultaneously presupposes its power" (Richland 2013: 213)—legal truth is absolute in place and time. Upon considered deliberation, determining the finding of fact and application of legal principles, the language of law commands a singular legal truth.[7] A litigation may be complicated. A judge's decision may be complicated. But that judicial opinion is a coherent, rational, and inevitable legal truth based on the legal facts found and the legal principle applied. The verdict—the *verus dictum* (true saying)—is a "declaration or speaking of truth" (Constable 2010: 13).[8] In the juris dictio of courts of law, legal truth—and the facts determined legally veridical as a function of procedure and doctrine—is "found," not made. Through the work of "finding"—enabled by employing the "pragmatic warrants" substantiating legal authority—a court of law simultaneously settles which facts are "legally accepted" as true and renders *the* "authoritative account" to decisive effect (Mertz 2007: 67). This is the case, irrespective of the controversy surrounding a court's findings of fact or its role in authorizing the distribution of risks and harms (Beck 1992; Proctor 1995). There is, of course, a tension here. As Elizabeth Mertz and other legal scholars note, jurisprudence broadly recognizes that its truths are found as

such by virtue of particular processes and procedures. And yet, in rendering a ruling and decreeing sanctioned penalties, judicial opinion often registers a conviction that implicitly attributes (more or less brazenly) "legal truth" to be real—or, at least, "highly authoritative as to epistemological certainty" (Mertz 2007: 67). Because the law invokes justice as fundamental to its being, verus dictum is normatively attributed to be *the* truth. That is, once loosened from its formal authority and exhausted of all processes of appeals, judicial opinion routinely lands as consequential truth in the world.

Exploring the Ecuadorian lawsuit against Chevron, its US countersuit, and its international arbitration, and in concert with the work of critical legal scholars (Eades 2008; Jacquemet 2009; Jain 2006; Jasanoff 1995, 2012), *The Small Matter of Suing Chevron* interrupts the notion that juris dictio "finds" the truth. Rather, the journey through these litigations follows how truth is *made* and also made complex. The paradox is that while the law cannot allow for the complexity of truths made, it partakes in enacting truth precisely as such. The task I have set for myself is, on the one hand, to show the complexity of the relationally contingent, sociomaterial compositions that produced legal truths over the course of these litigations. And, on the other, to signal the fraught tenor of law's complicity in the corporation's claim to being a sovereign moral actor.

The book's title, being plurivalent, seeks to signal this condition. For now, what's salient is the work of irony. Suing Chevron was clearly no small matter; it was a monumental feat that, in turn, generated monumental counterfeats. More trenchantly, that polite, if vaguely cheeky, rectifying formulation—"there is the small matter . . ."—tenders the proposition that the truths in these lawsuits were densely embedded in processes far exceeding their singularity or fixity, far exceeding the form of their authoritative rendering. The "small matter" seeks to rouse curiosity and materialize the contradictions inherent in liberal legality—that the objects of law and the subjects of law, far from being independent, autonomous, pregiven entities found with inherent facticity or will, all issue forth in practice as compositions saturated in relational contingencies.

The Small Matter of Suing Chevron proposes that the 2011 Ecuadorian judgment unfolded as it did in Ecuador not because, as Chevron claimed (and the US and international arbitration courts concurred), the Ecuadorian judiciary was corrupt. Nor did it find Chevron liable because, as the Lago Agrio plaintiffs (LAP) claimed, rightful science triumphed over evil, like David over Goliath. Rather, what I suggest was consequential in adjudicating this case were the procedures unique to Ecuador's civil law tradition, whereby geochemi-

cal, physiological, contractual, statutory, and experiential "facts" were both produced and subsequently argued as "evidence" to prove and disprove environmental, health, and contractual liability. Without doubt, stark disparities marked the lawsuit. And, clearly, missteps occurred. However, engaging in an analysis attuned to the complexity of the lawsuit, however, reveals that neither disparities, nor improprieties, nor scientific truth determined the legal outcome in Ecuador. Rather, the limitations and indeterminacies of science, the compromised quality of corporate contractual arrangements, the expanded modes of legal recognition, and the sociomateriality of "facts" and their making enacted a legal reality in Ecuador that led to this unparalleled and fiercely contested ruling.

COMPLEXITY'S AFFORDANCES

The Small Matter of Suing Chevron suggests that much has been lost in the US federal court and the PCA ruling that the Ecuadorian litigation was a "legal absurdity" (Chevron's phrase). Far from inconsequential, the nearly eight-year litigation against Chevron in Ecuador offers profound insights about truth and complexity. Countering Chevron's successful (in the United States and the world of commercial arbitration) "corruption" narrative, this book explores how (despite its flaws) the Ecuadorian litigation might serve as an instructive sociolegal assemblage for reckoning seemingly intractable contamination disputes.

The chapters that follow indirectly repudiate Chevron's successful legal counterclaim—and indeed the position of the US district court, the US court of appeals, and the PCA in The Hague—that portrayed the litigation in Ecuador as a sham and Ecuador's judicial system as corrupt. The text traces in detail how Ecuadorian court procedures gave form to a complex reality and made its slipperiness stable enough for judicial reasoning to distribute responsibility under the law. The "facts" generated from the court's unique judicial assembly of judicial inspections (fifty-four selected by the parties and nine by the court)—whether about hydrocarbon chemistry, disease etiology, business deals, laws of the Republic, local stories, or sensory perception—did not establish singular truths. Rather, the facts of chemistry hovered in the realm of the uncertain; those of disease in the realm of the indeterminant; those of contract in the realm of the dubious; those of law in the realm of the interpretive; those of testimony in the realm of the subjective; those of experience in the realm of the intuitive. They opened space for a reasoning that bowed toward precaution, among other things, to render a judicial decision.

The US court abided in and generated its own complexity, swayed by an imperious judicial hubris, the strictures of legal technique, and the litigating prowess of corporate lawyers. For one, it could not recognize the Ecuadorian proceedings as juris dictio. This was one of the foundations from which the US court determined that Chevron's accusations of subterfuge by LAP lawyers and Ecuadorian judges actually occurred.

Importantly, then, *The Small Matter of Suing Chevron*'s fundamental ethos is not to determine truths, or arbitrate truths, but to follow how truths were made. That is, the larger aim of this book is to understand the complexity by which the judicial rulings came to be made definitive. But what do I mean by complexity? A good jumping-off point might be a baseline understanding proposed by social theorists John Law and Annemarie Mol. Complexity exists, they suggest, when "things relate but don't add up," when "events occur but not within the processes of linear time," or when phenomena appear to "share a space but cannot be mapped in terms of a single" grid of intelligibility (2002: 1).[9] These sorts of predicaments infused both the litigation against Chevron and the corporation's countersuits. And this provokes reflection on the material, ethical, and legal conditions that juridical rulings and dispute parties sublimated in their determinations of truth. *The Small Matter of Suing Chevron* seeks to gather and recompose that which the law and those party to it often volatilized into the ether: the aberrant phenomena, the inconvenient practices, the dense repositories that made messy worlding processes.

So how were particular, highly contested legal truths derived? I explore this question by dissecting the competing facts that each side produced out of similar conditions. My analysis of the Ecuadorian litigation gives presence to a world in which absolutes rarely obtain, and yet decisions and actions are taken regardless. This is a world composed of complexity where, instead of certainty and fixity defining the ground from which to move, indeterminacy, unknowing, and ambiguity in part constitute the sphere of legal mastery. My analysis of Chevron's countersuit gives presence to a world in which reductive interpretation and discerned dissembling in part constitute the sphere of legal mastery. My analysis of the PCA arbitration gives presence to a world in which ambivalent legal technicalities, soldered together with performed misinterpretation, constitute the sphere of legal mastery. The court of each jurisdiction necessitated a distinctive mode of judicial mastery—techniques for assembling a unique jurisprudential grid of intelligibility—to render its legal truth. There was nothing straightforward about this, however. All knowing comes through method.

Holding that in mind and reworking Marilyn Strathern's words, it matters what method we use to think other methods with.[10] While researching and writing *The Small Matter of Suing Chevron*, chemistry recurrently surfaced as a problematic. As will soon be clear, chemistry influenced my thinking and informed my analytical point of entry. Leaning on chemistry, a discipline manifestly aware since the eighteenth century that its knowledge was methodologically mediated, underscored all the more the salience of method in my own knowing. A long line of philosophers of science suggests that what is known is contingent on the technical, procedural, and methodological circumstances of knowledge-making practice (Bachelard 1953; Canguilhem 1991; Rheinberger 2010). A number of science studies scholars extend this insight to propose not only that scientific methods describe their object of study but also that variable techniques of inscription produce it (Coopmans et al. 2014; Dumit 2004; Latour 1988; Latour and Woolgar 1987; Mol 2002; Vertesi 2015). The gnawing question: how can we seriously consider the proposition that method in the social sciences similarly describes and partakes in constituting its object of study (Latour 2005; Law 2004)? Chemistry inspired a method of delving into this legal trilogy—a legal saga whose meaning has been densely congealed through legal texts and public commentary—in a way that sustained an element of indeterminacy, openness, and surprise. It gave me alternative ways of inquiring and intervening, and for reflecting on how method manifests its object.

To begin, insights from chemistry shifted my analytical register away from a passion to denounce, away from a focus on overt power, away from a preoccupation with savvy charismatic characters, and away from the urgency to give voice to the forgotten. Others, scholars and journalists, have produced significant and moving work in these areas. Beyond the plethora of news articles on these legal claims and litigations, extended pieces of investigative reporting have appeared in *Vanity Fair* (Langewiesche 2007), the *New Yorker* (Keefe 2012), *Rolling Stone* (Zaitchik 2014), and the *Nation* (North 2015, 2021), each variously following two LAP lawyers, Steven Donziger and Pablo Farjardo. Two books present Chevron's case in a positive light (Barrett 2014; Goldhaber 2014a). A growing collection of anthropologists has analyzed the effects of Texaco's oil operations on Indigenous peoples (Cepek 2012, 2016, 2018; Krøijer 2017) and of the process of litigation on local populations, marginalization, and national identity (Fiske 2017, 2018; Ofrias 2017; Ofrias and Roecker 2019; Valdivia 2007). Law scholars have explored the cases' legal challenges (a limited list includes Alford 2012; Gomez 2013, 2015; Guamán 2019; Khatam 2017; Kimerling 1991b, 2006, 2013a, 2013b; Mella 2017), includ-

ing an elegant case-study analysis (Aman and Greenhouse 2017). And a few documentaries detail the lawsuit, *Crude* (Berlinger 2009) being the most significant, with another currently in the making.[11] Ultimately, the legal team for the LAP will chronicle the events they lived. As may Chevron representatives as well.

Similarly, given that high emotions commonly infused discussion of this legal saga, thinking in parallel with chemistry directed me away from anticipated territories. Extending insights from chemistry compelled me to explore the lawsuit and the countersuits, and the discrete controversies within each, in ways other than through a lens of winners and losers, right and wrong, good and evil, exploited and exploiter, honorable humility and insatiable greed, noble redemption and shameless transgression. These labels, of course, have their place. But they easily flip and work for either side in the lawsuit and the countersuits, depending on one's moral persuasions and webbed positionality. Moving away from a good/evil analysis enabled me to think beyond the fact that what corporations do is simply lie. Not that they don't; lying was a recurrent practice. But what makes the oil industry, and Chevron in this case, so powerful is not that they lie about and falsify the real. It is that they generate entire worlds and those worlds enfold and recompose a plethora of entities and beings in coalescing "truths." Indulging in "the seductive clarity of denunciation" (Redfield 2005: 349) extends, for those of us in the petro-techno-zones of privilege, the illusion that we are not implicated in the very worlds the industry relationally elaborates. That is, it elides the dilemma that we are profoundly complicit in the very industry we condemn. The compulsion to denounce, rather than inspect, the relationships we sustain with and through crude oil is insufficient. Complicity invites discomfort and asks more of us—a tact, a discernment, a sensibility that eschews comforting binaries, hierarchies, and transcendence.

Having said this, one should not assume that condemnation, power, and the subaltern condition are absent from this book. Indeed, I take Chevron's relentless capacity in this legal saga as a sustained given. However—and here I recognize my debt to Michel Foucault (1980, 1995), Bruno Latour (2005; Latour and Woolgar 1987), and Gilles Deleuze and Félix Guattari (1987)—in *The Small Matter of Suing Chevron*, condemnation, power inequities, and the despair of contamination are effects of analysis, not the medium of analysis. Far from advocating agnosticism, the delve into complexity that I am encouraging in the chapters to come invites openness—becoming susceptible to what account-ability and respons-ability (cf. Haraway 2015) might entail.

In common speech, "valence" refers to the significance or emotional force that is generated, sustained, or repelled among entities in a particular context. It captures a realm of affective relationality and speaks to a bodied, intuitive, and prehensive capacity: that is, a capacity to discern a phenomenon, irrespective of cognition, such that it subsumes experience and transforms being (cf. Stengers 2011 on Whitehead). Valence registers an entity's relational proclivity toward being susceptible and responsive in rapport with others. Etymologically, "valence" comes from the Latin noun *valentia*, meaning "vigor, capacity, power," which derives from *valens*, the present participle of the verb *valere*, "to have strength, to be well." It resonates with a Deleuzian notion of affect, extending Spinoza's *affectus*/*affectio*: that state or mode of a body that slips along a passage of ever-growing and subsiding intensities as it simultaneously affects and is affected by another (Deleuze 1978). The concern being "the distribution" and "reciprocal influences" of affect across bodies (Jensen 2018: 32–33).

In chemistry, beginning in the mid-eighteenth century and extending for about one hundred years, chemists maintained that each known element had a fixed and specific valence. This valence was an affinity unit, or measure of rapport, numerically determined by the number of hydrogen atoms with which an atom of a given element could combine. Over the subsequent centuries, the chemical notion of valence became more nuanced. Today, valence can refer both to this simpler mechanistic definition (a fixed value) *and* to the combining power of chemical agencies more generally. Here the relative capacity of an element to connect, react, or meld—or to disavow or repel connection—is not static or stable but rather is ever-contingent on milieu. It reflects at its core a purely relational motive force. To speak of valence means to speak of a relationally constitutive reality in which entities are never singular or fixed but rather always emergences of collective composition. It is to hold the world and worlding as composed, in Marisol de la Cadena's words, of entities "with relations integrally implied" (2015: 32).

This book takes as its sphere of inquiry "crude's valence of truths." That is, leaning on chemistry and chemical philosophy, it delves into how competing truth facts at the core in this legal saga were, far from absolutes, emergences of collective composition: the often-arduous, agitated, viscously transformative combining effects of, with, and through crude oil. To be clear, I am not a chemist, nor do I claim chemical expertise. Rather, following the prodding of philosophers of chemistry, I seek to use chemistry—and, in particular, these

scholars' writings on the historical practice of chemistry—as a muse capable of rousing novel discernment and leading me into the complexity of the amalgam between law, science, and crude. The world of chemistry is that of compositional entities. Chemistry offers a grammar for understanding as collective, for capturing the different modalities that constitute relational-being-ness, and for knowing that complex entities are never the sum of their parts. Chemical process and chemistry's insights give yet a denser imagination to the phrase "the small matter . . ."

But before I expand on configuring methods, let me provide some context.

GROUNDING SUBSTRATA

On May 7, 2003, forty-eight indígenas and campesinos filed a complaint in the Superior Court of Justice of Nueva Loja, soon to be renamed the Provincial Court of Justice of Sucumbíos, under the tort provisions of the Ecuadorian Civil Code (Articles 2214, 2215, 2229, and 2236) and the procedural authority of the 1999 Environmental Management Law (Ley de Gestión Ambiental).[12] Codified in 1861, the Civil Code provisions granted individuals the right to claim (either singly or via an *acción popular* [popular action]) that a tortfeasor remediate harm caused by negligent action. Thus, while the Civil Code long granted collectives the right to seek recompense from wrongs, the then-new Environmental Management Law elaborated on those rights and codified procedural rules.[13] It established the procedural regime by which individuals and groups affected by environmental degradation could pursue a legal claim on behalf of their communities with the intent of compelling remediation and recovering damages for environmental harm.

The lawsuit against Chevron was lodged on behalf of thirty thousand Indigenous and non-Indigenous inhabitants of the Ecuadorian Amazon. It alleged that Texaco had knowingly used substandard and obsolete technologies in its Amazonian oil operations between 1964 and 1990 and that these technologies systematically strewed industrial wastes throughout its vast oil concession, or area of operation. Over the course of Texaco's operations and into the unforeseen future, plaintiffs claimed, these industrial wastes threatened human and nonhuman well-being with death, disease, deprivation, and dislocation. And all to save a buck, the lawsuit alleged; implementing mid-twentieth-century, state-of-the-art technologies would have increased Texaco's per-barrel price of production and thus reduced profits. The company did not want either.

However, the life of the Lago Agrio legal claim predated its May 2003 filing in the Ecuadorian court. Indeed, the lawsuit was initially lodged against

Texaco ten years earlier in the District Court for the Southern District of New York, in November 1993. Greater detail of this history will soon follow, but for now suffice it to say that the lawsuit encountered a storied decade of pretrial hearings in the United States (between 1993 and 2002) as the case ricocheted back and forth, and back and forth again, between the US federal court and US court of appeals. In 2002, the federal courts sent the case to be litigated in Ecuador under specific conditions. Once in Ecuador, the case resided under the auspices of the Provincial Court of Justice of Sucumbíos, which held jurisdiction over the region in which Texaco's former oil operations resided. The actual litigation in Ecuador commenced six months later in October 2003. Over eight years (from May 2003 to March 2011), the case was overseen by the president of the court. Because the "presidency" was a rotating position and because two presidents recused themselves, in total six judges presided over the litigation, with two serving twice.[14]

As defined by the Environmental Management Law, the litigation process in Ecuador was divided into three distinct parts. The first day, October 21, 2003, hosted a "conciliatory hearing" aimed at finding a resolution between parties. When conciliation clearly was not in the cards—that first day, Chevron's counsel read its eighty-eight-page response in which the corporation contested the Ecuadorian court's competence and its jurisdictional authority, denied all alleged wrongdoing, and moved to dismiss the complaint—the case proceeded to the "evidentiary phase." This phase began with a week of court testimony and six days in which the parties outlined their requests for all present and future evidence they sought to prove their case. Parties requested documents, witness testimonies, and expert assessments, but most importantly they requested the onsite inspection of 122 allegedly contaminated oil-operation sites. These judicial inspections, and the extensive scientific labor associated with each, composed the bulk—five years—of the evidentiary phase. In 2010, the final judge, Judge Nicolás Zambrano, ended the evidentiary phase and embarked on the "judicial review and judgment" phase.

Ultimately spanning over two decades, three continents, and two legal systems, this legal saga is nearly overwhelming when one takes into account the Ecuadorian lawsuit against Chevron, Chevron's countersuit in the United States, the Chevron–Republic of Ecuador international arbitration in The Hague, and the multiplicity of derivative judicial proceedings. In 2012, Judge Gerard Lynch wrote, "The story of the conflict between Chevron and residents of the Lago Agrio region of the Ecuadorian Amazon must be among the most extensively told in the history of the American federal judiciary."[15] In terms of the volume of written pages and the size of case files, Lynch,

a veteran judge, undoubtedly knows. Now multiply this. Both the case file in Lago Agrio and the one in The Hague similarly burgeoned beyond what the courts normally handled. While all three of these case files were related, they were far from identical; because they were different legal claims pursued within different legal traditions under different laws and procedures, each recognized and facilitated very different forms of garnering and submitting evidence. At its close, the case file in Ecuador alone was more than 230,000 pages—and much of the text on these pages was single-spaced.

Attending to this complexity is the focus of *The Small Matter of Suing Chevron*. Admittedly, my considered attention is partial. It does not engage every facet of this legal saga and it emerges through a particular method. As Strathern reminds us, "Ethnographic truths are similarly partial in being at once incomplete and committed" (2005: 39)—by which she means that there is always more data and that an analytic tack obliges distinct follow-through. Partiality, as I'll expand later, always entails particular connections. *Small Matter* explores specific dimensions that I feel are crucial to understanding crude's valence of truths. Given the authoritative weight of the US judicial systems and the ramifying consequences of its legal truths, the bulk of this book is an intervening rejoinder to the US court having delegitimized the 2011 Ecuadorian ruling. As such, the first five substantive chapters of this book descend into the density of the Ecuador litigation, suspending in the background puzzlement over Chevron allegations of Ecuador's judicial incompetence. Collectively these chapters suggest that the Ecuadorian litigation has much to teach about how to think: parts and wholes, sequences and compositions, individuals and mixts, precisions and veridictions, constrained and expansive relationalities. The final two chapters descend into the density of Chevron's countersuit and arbitration, respectively, and they signal how liberal legality can so brilliantly thrive on the more meager, isolate, and brittle terms of the pairs above. In doing so, these final chapters critique Chevron's legal-fraud worlding that both judicial bodies condoned and they surface, or distill, the compositional metamorphosis through which legal technique championed a reductive world.

The Ecuadorian litigation took place over seven-plus years and swirled, in my rendition, around three key controversies: (1) whether crude was toxic, (2) whether contamination had undermined human health, and (3) whether layers of contracts precluded corporate liability. The countersuits, each of different durations and intensities, coalesced, in my rendition, largely around misapplied chemistry, the contract form, and technicalities of law, variably enabling contamination concerns to percolate into their logic. This

book's chapters (together with conceptual and empirical interstices) represent a latticework for thinking, in complexity, these dimensions and their excessive, unconsidered, and aberrant folds. Each chapter looks at practices that comprised and surrounded the litigation and its countersuits, focusing on how evidence and legal arguments came to take shape by virtue of litigation practices, judicial protocol, and legal philosophy. But the chapters don't seek to determine a truth around each key controversy. Rather, they seek to understand the larger scientific, judicial, and social debates within which and through which facts came to be fashioned and argued as legitimate legal truths. In my attempt to grapple with what was at stake, I have engaged in a plurality of research practices—transporting me to places that exceed the normative terrain of anthropology. I have examined and reexamined extensive court documents and legal doctrine. I have schooled myself in scientific debates around hydrocarbons, epidemiology, and environmental remediation. I have studied legal scholarship on corporate and contract law. And over the course of two decades, I have had in-depth conversations with lawyers, scientists, and indígenas and campesinos affected by Texaco's former oil operations in the Amazon.

Singularly striking when comparing the court documents from the Ecuadorian and US litigations is the recognition that different judicial traditions distinctively conditioned how facts could emerge and be argued as evidence. In Ecuador, controversies over the toxicity of crude, oil's effect on health, and a contract's capacity to dictate closure unfolded within the context of Ecuador's civil law tradition. Civil law is an "inquisitorial system" of law. Among other things, in Ecuador this meant that the court itself—along with opposing legal teams—was charged with investigating the issues at stake. As such, the bulk of the trial consisted of five years of onsite, official judicial inspections of oil-production sites. At each site, the judge, legal teams, scientific crews, local residents, and the press trekked through scrub forest to examine alleged contamination and its effects on human health. During each judicial inspection, technical teams retrieved water and soil samples for chemical analysis, local residents gave testimony about oil's incursions into their lives, legal teams advanced arguments to establish or absolve corporate liability, and the judge and his clerk viscerally experienced the sight, sound, smell, and feel of former Texaco operations. The judicial inspections thus served as the ground from which what would be argued as evidence—an array of sensory, geochemical, engineering, narrative, epidemiological, contractual, and statutory matter—emerged and was admitted to the court. The effect was that, in Ecuador, scientific controversy, far from curtailing judicial action (as

often has occurred in US toxic torts), combined (generating unanticipated force) with sensory experience, oral testimony, and national statutes to form the basis for taking legal measures.

Chevron's countersuit, a seven-week bench trial litigated under the US common law system, focused on whether the Ecuadorian ruling had been procured through fraudulent actions. An "adversarial system" of law, common law litigation hinges significantly on the staging of a spectacle before a judge (and often jury) in which legal technologies and technicalities, lawyerly skill, witness preparation, and litigation financing, as well as judicial prerogative, can all shape legal proceedings and outcomes. At one level, the corporation's legal firepower outlitigated the Ecuadorians and their lawyers. With infinite economic resources, savvy corporate lawyers far outpaced their opposition and, splicing together improprieties garnered from the universe of their opponent's case documents (having severed attorney-client privileges), produced a near-airtight and convincing-enough narrative of partial truths. The impressive but often-overwhelmed LAP legal defense team, negligible witness preparation, English-to-Spanish translation problems, and restrictions on submitting evidence crippled the Ecuadorians—all giving greater plausibility to Chevron's convincing-enough narrative. The effect was that, in the United States, the immense force (think the thermodynamic energies of Chevron's two thousand counsel detailed on extensive discovery actions, unprecedented witness protection and preparation, and exquisite lawyering) needed to decompose the complexity of the Ecuadorian litigation and effectively recompose it through reductive, constrained, sequential elements had formed the basis of taking legal measures, despite never, not once, demonstrating substantive evidence of fraud.

The story, of course, does not end there; US courts do not have the final word. The US district court ruling is neither binding nor enforceable abroad. However, this is why the decision of the PCA in The Hague is so disturbing. And this is precisely why it is important to generate methods that interrupt the dominant trope for making sense of this legal saga. In his volume *Chemical Philosophy*, philosopher Manuel DeLanda remarks "what we consider real varies depending on whether we think of reality as that which we can correctly represent, or as that which we can affect and which can affect us" (2015: 186).[16] Although publicly committed to the former, Chevron's process was that of the latter. I, too, have espoused the latter. The difference: Chevron's method sought to reduce. Mine seeks to expand.

Coalescence II

CONFIGURING METHODS

When I first began exploring the case file of the Ecuadorian trial, I was perplexed by one of its primary questions: did the crude oil embedded and often visible in the landscape of Texaco's former oil concession contain dangerous elements? Indeed, I was befuddled by the amount of energy and concerted effort that scientists and lawyers had expended to demonstrate whether crude oil was, or was not, toxic. Wasn't contamination obvious and easy to prove? Quickly, it became apparent that my running assumption ("of course, crude oil is toxic") was naively inadequate for grasping the scientific and legal problematics at stake. My confusion only intensified as I delved further and looked at the actual data and analyses emerging from hundreds of soil and water samples collected during the trial's judicial inspections (which took place from January 2004 to March 2009). That confusion pushed me to learn about the actual chemistry of hydrocarbons and, more broadly, to read scholarship on chemical philosophy.

As noted, a significant focus of the judicial inspections was extracting material samples from the zone of Texaco's operations and analyzing their molecular content. But how was it possible for each party to make diametrically opposed claims about the reality of the material substances at the same judicial inspection sites when those claims were based on its chemistry? Of all the sciences, chemistry was, in my mind, a well-established, elemental science, hardly controversial. Of course, conflicting positions could arguably have resulted from one side or the other tampering with samples.[17] But especially in the early years of judicial inspections, the scientific results of laboratory assays detailing the molecular compounds found in soil and water samples were not dramatically different between parties. That is, the raw data that each legal party generated were not significantly dissimilar. This suggested that something else was to be learned from interrogating the systematic logic behind opposing arguments and that I needed to pry into the chemistry of crude oil.

The question of chemistry—and the chemistry of crude, to be specific—was not merely confined to the analysis of allegedly contaminated field samples. As I delved deeper into this legal saga, the question of chemistry did not disappear. Rather, it proved significant for understanding the configuration and trajectory of the lawsuits in general. As such, the problematic of chemistry emerges in every chapter. So, some words on configuring a method. Bear with me as I indulge for a moment in a bit of chemical philosophy. My in-

tention is to invite you to consider some perhaps less-familiar substrates of thought.

CHEMICAL PHILOSOPHIES I

Since its alchemical beginnings, the practice of chemistry has long been concerned with the operations involved in reducing bodies into and reconstituting them from their constituent parts.[18] With the "chemical revolution" of the late eighteenth century, this pursuit came to be chemistry's defining project. Led by Antoine-Laurent Lavoisier, the popularly acclaimed father of chemistry, a world where all matter derived from four fundamental elements—air, fire, earth, and water—transformed into a world constituted by a plurality of simple substances in combination. Building on the work of many predecessors (for instance, that of Robert Boyle a century prior) and many contemporaries (Joseph Priestley and Henry Cavendish, among others), Lavoisier embarked on a series of meticulous and laborious experiments (from 1772 to 1794). By the late 1770s, he upended the reigning phlogistonist theory of combustion (i.e., the idea that entities burn because a component of fire [phlogiston] inheres within them). In 1777, he isolated "eminently respirable air" (Lavoisier 1790: 37) from metal acids and demonstrated that combustion derived from combining with this "air." And in 1783, he demonstrated that when "respirable air" combined with a second "inflammable air," they formed water. In short, Lavoisier and his team threw Aristotelean fundamental elements into question.

Shortly following these experimental demonstrations, in 1789, Lavoisier, together with colleagues (Louis-Bernard Guyton de Morveau, Claude Louis Berthollet, and Antoine François de Fourcroy), christened the nascent discipline with a new "chemical nomenclature." The new naming system captured the conceptual rigor and experimental protocols erupting from Lavoisier's laboratory. This scientific nomenclature determined new isolated substances by their competence—that is, what they were able to perform. For instance, "respirable air" became *oxygène* (from the Greek *oxys* [sharp, acid] and *-genes* [creation, formation]) because it was thought to be a constituent of acidification. And "inflammable air" became *hidrogène* (from the Greek *hydor* [water] and *geinomai* [to bring forth, engender]) because of its capacity to engender water.[19] Similarly, the new nomenclature deemed that a compound be called by the sequence of its component elements. Thus, the combination

"water" resulted from the correct ratio of hidrogène and oxygène combining, resulting in the chemical equation: water = hydrogen + oxygen in proper proportion.

As detailed in *Traité élémentaire de chimie* (1789), Lavoisier and others transformed the metaphysical arts of alchemy into a reproducible and quantifiable empirical science. The aim was to purify and distill natural substances into their simple component parts so as to describe, classify, catalogue, and analyze the resulting chemical elements. Contrary to the Aristotelean-influenced thinking of the time, elementary substances for Lavoisier were not a set of a priori givens. Rather, "simple bodies" (as he called them) were those that could no longer be decomposable, a state, he noted, that was contingent on the laboratory techniques available. Lavoisier's simple substances were actors, but actors whose performance hinged on the dispositions of a substance, elaborate laboratory instruments, and the skilled manipulation of the scientist in time-consuming trials.

Lavoisier and his team determined that "rapport" (often translated as "affinity") was a "new chemical character." *Tableaus de rapportes*, or tables of affinities, speckle his texts, delineating the descending order of substances obtained by virtue of combustion, dissolution, and distillation when combined with a third substance. The notion of "chemical affinity" sought to capture the relative gradient of force or "elective attraction" between different elements. Thus, not only were new elements identified by one thing they were capable of doing (i.e., oxygène and hidrogène), but elements were also seen as sophisticated agents with capacities in their own right. His "Tableau de la nomenclature chimique" of 1787 listed fifty-five simple substances clustered in groups according to their combining behavior or rapport when combined with oxygen, bases, and acid. This particular table was the rudimentary foundation of the contemporary periodic table.

In the early nineteenth century, John Dalton's theorizing of the atom gave a precision to Lavoisier's simple substances. Dalton hypothesized that matter was made of particles called atoms (from the Greek *atomos*, meaning uncut, unhewn, or indivisible), with each element composed of its own unique atom, always identical in mass and size. This was not the atom of quantum physics; rather, this chemical atom was the simplest unit necessary for combination. Under reactive conditions, Dalton theorized that atoms combined, separated, and rearranged but were never destroyed. By the midcentury, cumulating experimental results indicated that there were particular patterns

to how the atoms of distinct elements combined. In 1857, Friedrich August Kekulé—a seminal thinker in the field of organic chemistry—asserted that an element had a fixed capacity to combine with other elements, and he called the measure of this fixed capacity an "affinity unit." For instance, hydrogen had one such unit (or "valence" as it was soon called), while oxygen had two units (or a valence of two). Kekulé concluded that the notation H_2O equaled two monovalent hydrogen atoms combining with one divalent oxygen atom.

About ten years later, in 1869, when Russian chemist Dmitri Mendeleev published his first rendition of how chemical elements fit together, "valence" proved crucial in determining the structure of the periodic table (both the "period" and "group"). Without ever seeing an atom, nineteenth-century chemists determined the valence of a given element on the basis of the number of hydrogen atoms with which that element combined or replaced in a compound. The principle of fixity and exactitude determined that valence was an intrinsic property of each element.

Over time, however, as chemists isolated more elements and laboratory instruments expanded experimental possibilities, chemists became increasingly aware that for most elements their modality and capacity to form bonds also fluctuated. Said another way, the valence of an element, while detailed precisely in the periodic table, was also not a fixed property; it could shift and change depending on its atomic structure, that of the atoms with which it combined, and the particular configuration of the emergent molecular compound. Most elements did not have an absolute valence. Matter, it would seem, was not simply the effect of an element's invariable motive force.

VALENCE

Let me pause here. What is to be learned from this historical-philosophical sketch? And why is it significant for thinking about a legal saga?

As taught in textbooks, an element is a member of a class of 118 pure, essential substances that constitute (either singly or in combination) matter. Their stability accounts for the periodic table—that elegant symphony of precision that orchestrates relations among the fundamental types that make up everything around us. The arrangement of elements in the periodic table coordinates a wealth of knowledge and fixes determinations of mass,

weight, oxidation, and valence. Under conditions of experimentation, many of these measures stay constant; valence, however, may very well not.

As has been clear from Lavoisier onward, although elements are the fundamental components of chemical operations, they are not pure facts of nature. Their evincing is an artifact—the consequence of the art of actively engendering facts. They are what Bruno Latour calls a "factish" (1999) and, before him, what French philosopher of science Gaston Bachelard in 1953 called "facticious" (i.e., factitious; Bensaude-Vincent 2014: 70). Actualized through complex processes of chemical purification, the materialization of an element necessitates the intercession of chemical proclivities, skilled scientists, and elaborate instruments. Lavoisier underscored the relativity of elements precisely by defining them as contingent on the analytic techniques at the experimenter's disposal. This in no way undermined the presence of elements and their worldly consequences. It merely emphasized that elements were not passives in a world awaiting discovery.[20] This takes elements not as invariable building blocks of nature but as capacitated simple units "bound to laboratory operations" (Bensaude-Vincent and Simon 2012: 202), whose completeness as a set is indeterminate and whose incompleteness as a unit (expressed through its capacitated and malleable valence) animates openings.

Delving further: the structure of the periodic table emerged from the patterns that Mendeleev perceived after shuffling and coordinating the qualities of simple substances with their simple valence at unit weight. Today, students learn why the structure of the table makes sense in part because of how the electrons of each element differentially reside in atomic orbitals, the very configuration of which proffers to an element its combining power or valence. Explore chemistry beyond the table-derived laws and patterned functions, however, and exceptions abound in the hands of chemists. As a number of chemical philosophers note, an "element" of the periodic table does not exist as a reflection of the real (Bensaude-Vincent 1986, 2008, 2014; Bensaude-Vincent and Simon 2012; Bensaude-Vincent and Stengers 1996; Bernal and Daza 2010). Rather, it is an abstraction, a perfected ideal, that functions as a vital tool in a chemist's operations. As philosophers of chemistry Bernadette Bensaude-Vincent and Jonathan Simon note, "Elements, in contrast to simple and compound substances, have no tangible reality, they are abstract entities that cannot be touched or seen" (2012: 159).

As substance, elements exist only as enactments in relation, not as one in a sequence of essences in juxtaposed isolation, as depicted in the periodic

table. And an enacted element's capacities change in relation. That is, capacity hinges on the properties of the emergent compound into which it forms. Consequently, valence (that combining power of chemical agencies) is not absolute, a set numerical index of behavior. Alone, in its regimented order on the periodic table, it is one thing; in different modes of collectivity, it can also be something else. That is because, in association, an element assumes agencies that exceed its behavior in isolation (which is an abstraction). This transformation (in singular, one thing; in assembly, something else) does not simply mean that valence as a quantity changes; this is not the mere numerical amplification of connections. It is that valence, as a capacity and modality, transforms. This means that the way of relating, the tempo and arrangement of combining, and the texture of melding all change. One might think of valence then not as a fixed quantity or expression but as a motive and emotive force that within the merged plurality of collective-becoming—beingness "with relations integrally implied" (de la Cadena 2015: 32)—marks orbitals of coalescence. Tracking de la Cadena (2017) once more, one might say an element is the abstraction that is, *if* it becomes with, and therefore is "not only" what it also is. Said otherwise, rapport, relational-being, is precisely what allows the element to *be*, to exist as the abstraction it not only is.

The task that I have set out for myself is to wade through crude's recombinant valence, the recombining capacities through which multiple truths were made in this lawsuit and countersuit. *Small Matter* takes crude oil as *its* vital element and chemistry as its method for considering crude's valence of truths. Following Lavoisier (and after him a bevy of science and technology scholars), it is clear there is nothing purely natural about crude.[21] It holds no pure fact. Crude oil is begotten of and contingent on a complex of human and nonhuman skill and cunning. It is a vibrant substance imbued with wily capacity, and it only and always exists through the intercession of molecular, chemical, geomorphic, human, and technological processes. It is a sociomaterial composite of atomic intensities, molecular configurations, subterranean geographies, scientific potentials, economic desires, industrial dependencies, ecological horrors, and chemical requirements and promise.

The chapters that follow delve into how what each party said and possibly knew—and presented as evidence and represented as "fact"—about crude was always bound to and by their context of production. Whether the concern was to determine or refute the possibility that crude was toxic, that contamination affected human health, or that a contract foreclosed liability, a constellation of chemical-technical-human operations coalesced the argu-

ments of each legal side. Despite alleging to present pure facts, the parties' arguments were composed, factitious. A plurality of pulls and attachments—variously enrolling transmuting hydrocarbon compounds—differentially deciphered and gave meaning to the chemistry of crude-oil hydrocarbons, or differently devised and inferred epidemiological probabilities, or differently interpreted and site-verified the execution of contractual agreements. Both parties' legal arguments about the molecularly toxic capacity of hydrocarbons, *or* health-risk probability, *or* doctrinal certainties of legal contract can productively be thought of as compositional entities immanent of collectively contingent chemical, disciplinary, industrial, regulatory, legal, and extralegal processes, not of enumerated and sequential essential elements or facts. Conceiving of the legal arguments this way destabilizes any pretense of singular, fixed facticity. And it interrupts the conviction that only one among competing arguments can occupy that role.

In its practice and its doctrine, law demands definitives. Indeed, one of law's constraints (cf. Stengers 1997)—that is, one of the obligations and requirements through which law functions—is an exigency for absolutes. An exigency whose fulfillment demands much work. Parties allege acts, produce evidence to substantiate purported acts, and argue their claim. The court must, after exhausting all possible interpretations and satisfying all procedural criteria, secure a "finding of facts," determine the legal truth, and render a decision. Jurisprudence requires a single, authoritative, final resolution in space and time. What stands out is how within the juris dictio of liberal law, facts are *not* made—a statement that the US district court judge, Lewis Kaplan, pronounced during the RICO countersuit on a number of occasions. Facts simply *are*—the task is to find them. Consequently, each party presents its facts as truths. And in the lawsuits involving Chevron, each side seemed singularly unable to (indeed, could not) trace the production of its own facts and could only address those of the other side by undermining them and calling them corrupt. Facts, however, are rarely so guileless. Extending the work of critical legal scholars, *Small Matter* deploys chemical insights as method devices to grasp facts' compositional enactments and ask what is the effect of claiming otherwise.

CHEMICAL PHILOSOPHIES II

When, in prerevolutionary France, Lavoisier decomposed compounds into simple substances, he meticulously monitored and measured his experiments. A curious pattern held: in a chemical reaction, the total mass of the product was the same as the total mass of the material with which he began; that is, an equal quantity of matter existed before and after the reaction. This further confirmed for Lavoisier an "equality" between the body examined and the substances obtained (1789: 141). As he wrote, the relation of a chemical reaction was that of a "faithful mirror" (*miroir fidèle*; 1787: 14). The logic was one of identity; the chemical equation signaled that a compound equaled its constitutive elements—the basis for the law of conservation of matter.

With chemistry's passage through the centuries, theories of atomic structure and molecular architectures finessed the understanding of the chemical compound. An electron's charge, position in energy level, and spin exceeded what a juxtaposed recitation of elements (i.e., H_2O = water; C_6H_6 = benzene) could disclose in accounting for a compound's properties. At the turn of the twentieth century, however, French physicist and mathematician Pierre Duhem worried that structural atomism, much like chemical nomenclature, was an analytical model that led chemists to "imagine that the reactants were actually present in the compounds formed by their reaction" (Bensaude-Vincent and Simon 2012: 196). Indeed, the entire logic of identity encouraged the illusion that hydrogen as such and oxygen as such—as separate entities—actually exist in water. They do not. Duhem wrote, "The chemical formula in no way expresses what really persists in the compound but rather that which is potentially there, that which can be extracted by the appropriate reactions" (2002: 151; Needham 2002: xvii). According to Bensaude-Vincent and Simon, Duhem wanted to hold on to the "enigma of chemical composition" (2012: 127), the conundrum that escaped both equivalent and structural logics.

An analogy made by Aristotle millennia before proved instructive. For Aristotle, the "mixture" was an aggregate in which individual parts come together, retain their identity, and form a new blend—as in barley and wheat in a mixture of grains (Bensaude-Vincent 2014: 67). But the "mixt" was the effect of a chemical reaction in which individual components were no longer decipherable as discrete entities in the constitution of a new body. In Duhem's analysis, the mixture was the combining of entities that retain their qualities (as if, in H_2O, hydrogen and oxygen are present as separate atoms of

hydrogen and oxygen). By contrast, the mixt was the combining of entities that, when combined, no longer exist as unique isolates (i.e., hydrogen and oxygen combine to obtain H_2O, but subsequent to their reacting they are no longer present).

The condition of the mixt is "never the simple sum of the properties of its components" (Bensaude-Vincent and Simon 2012: 127). Nor is the mixt analogous to the whole being more than the sum of its parts; this is not the adding together of parts and then enhancing with an extra sprinkle. As Bensaude-Vincent and Simon explain, the quandary of the mixt entails "the conservation of matter accompanied by the emergence of novelty" (127). It is also the dissolution of the prior—as parts cease to exist as clear and distinct units. The conservation of matter implies equivalence. But how can there be "equivalence," really, when the sides neither add up nor exist simultaneously? Either there is the mixt and the properties of its constituents are lost, or there are the decomposed constituent properties and the mixt is lost. But there is never both. And they are not the same (Needham 2002).

Aristotle reconciled this impasse and the paradox of the mixt through a language of pluridimensional, incompatible co-abiding. Although upon chemical reaction, elements no longer exist in *actuality*, they still abide in the mixt in their *potentiality*. Duhem resurrected Aristotle's quandary of the mixt to underscore that, in his mind, "atomism and molecular architecture, the approaches that dominated organic chemistry at the beginning of the twentieth century, were incapable of providing an exhaustive explanation of chemical transformation" (quoted in Bensaude-Vincent and Simon 2012: 126). In the irreducible complexity of chemistry's world, a world "populated by individuals with a range of capacities to put themselves in relation with one another," the work is to understand how the entities at stake "exist not only in the mode of actuality but also in the complementary mode of potentiality" (2012: 209).

THE MIXT

Taking liberties with this chemical concept, and ratcheting up analysis ever so slightly, *Small Matter* takes the controversy and condition of the lived effect of oil contamination as a mixt. The litigation had to reduce the complexity of this mixt. Each legal side deduced facts to establish the truth about

crude. Distinct elements in precise arrangements equaled the facts of toxicity, disease, and liability, which when added together sought to equal the truth of the mixt. The error of the chemistry student, however, is to think her equation (H + O + H = water), or molecular model, *is* the compound, *is* a figuration of the real. Similarly, the schooling of legal practice is to project, and then hold, enumerated facts as equal to, as a miroir fidèle of, the controversy at hand.

The Small Matter of Suing Chevron ventures two propositions. First, as noted earlier, facts *were* the processes that produced them. The chapters that follow trace how the facts enrolled by competing legal arguments—of chemistry to determine whether hydrocarbon contamination is toxic, or of epidemiology to determine whether petroleum operations cause cancer, or of contract law to determine whether layered business agreements grant the corporation immunity—were juridico-scientific assertions *and* contingent collective compositions. This does not mean that the facts were not real. Rather, it incites an inquiry into the processes of how these facts were made. Although skilled lawyering rendered facts as isolated absolutes, it was a labyrinth of sociomaterial-juridical techniques and commitments that stabilized them as such. As substance and dynamic forces, facts and their composite elements were already spinning in a constellation of preexisting relations, thwarting any notion that they rendered unmediated truths. This is what the phrase "crude's valence of truths" seeks to elicit: oil's constitutive relationalities that coalesced orbitals of truth.

A second proposition: The facts about toxicity, disease, and liability posed during the litigation were sorely ineffective in capturing the mixt—understood as the controversy and condition of the lived effect of oil contamination. Complex formations are not the sum of their parts—nor more than the sum of their parts—because collective compositions are not the effect of summation. To be complex is not the same as to be computable, despite summation being a preeminent legal method. The mixt exceeds deciphered elements because in-collective elements seep to be other than what they are in isolated narration.

As I suggest in the chapters that follow, the Ecuadorian court procedures, the plaintiffs, and the ruling judge all intuited this; and each variably proffered unconventional modes for effecting an impression of the mixt. By contrast, the US court procedures and ruling curtailed that imagination of facts and their combining. The concept of valence trains attention toward the intensities and emergences of collective coalescence. And it signals the effect of legal authority when unable to accommodate facts' factitious provenance.

CHEMICAL PHILOSOPHIES III

In the 1860s, Kekulé and others determined that not all chemical reactions or processes were reversible. Organic compounds (molecules containing a carbon-hydrogen bond) could not easily be decomposed and then recomposed. Indeed, although late nineteenth-century chemists were able to reduce many organic compounds to the varying proportion of their constitutional elements—for example, benzene can be reduced to six carbon and six hydrogen atoms (C_6H_6)—reduction did not inevitably allow for reconstitution. The molecular assemblages derived from animal and plant worlds seemed to afford properties distinct from those derived from mineral worlds.

Organic compounds, it turned out, are composed of a relatively small number of elements (carbon, hydrogen, oxygen, nitrogen, phosphorous, and sulfur). And, most puzzling, the same elements in precisely the same proportion could form numerous distinct compounds. Provoked by this enigma, Kekulé's research on benzene and his theory of its planar and ringed structure prompted organic chemistry, over the subsequent century, to consider the dimensionality of atomic and molecular forms and to rethink valence. How might the spatial dispositions of atomic and molecular collectivities enfold in valence?

Increasingly, a Lavoisierian impulse to understand the properties of a compound by examining the nature of its constituent elements grew problematic. Duhem, for one, rejected this directionality. Seized by Aristotle's quandary, he suggested the reverse: that the mixt engenders an element's properties, not the other way around. Duhem's proposition brilliantly problematized any simple rapport between elements and compounds, thereby "escaping the stifling to-and-fro between simple and composed" (Bensaude-Vincent and Simon 2012: 127). Indeed, the emergence with quantum mechanics of "valence bond theory" and "molecular orbital theory" in chemistry over the subsequent century closely built off of Kekulé's and Duhem's insights. And it did more. The exigencies of irreducible complexity—where the compound cannot be deduced from the elements—called for rethinking agency, causality, and emergence.

IRREDUCIBLE COMPLEXITY

For Duhem, valence was neither a fixed nor an intrinsic property of the element. Valence was *of* the molecular configuration; molecular configurations obliged valence. In fact, the mixt—be it a molecule or a multimolecular compound—necessitates that valence be a fluid and relational capacity. Combining tendencies emerge because of and through the larger orchestration. Valence enfolds in enacting transmutations and functions both as an emergent constraint and as possible radical abandon.

The space of valence, in this understanding, does not abide in a realm where atoms and molecules "stand as discrete and isolated entities with permanent properties waiting to be actualized and used" (Bensaude-Vincent 2014: 72). Instead, valence is preeminently of and in the milieu. Its capacities, trajectories, and potentials are derived of association. Said differently, elements and their composite space of valence always "exist as events in a world already furbished with crowds of interacting beings" (72). That the truths of toxicity, disease, and liability—the facts as if discrete essences—never fully accounted for the controversy and condition of contamination is what has both compelled my delving into this legal saga and accompanied my writing. It begs the question, how to enact the complexity of the mixt?

Coalescence III

VALENCE AS A CONCEPT THAT MATTERS

Modestly distilling insights from chemistry, *The Small Matter of Suing Chevron* takes up the challenge that valence affords. If valence is combining power, its potential lies in giving form and texture to orbitals of coalescence: in chemistry, orbitals are cloud realms of connective probability. Indeed, the trace of orbitals of coalescence is what this book seeks to bring into relief. Thus, I deploy valence not as a key to unlock the truth, the truth that escaped or was barred from the court. Rather, I use valence as a conceptual tool "with which one can bring things about by acting in the world" (Bensaude-Vincent and Simon 2012: 206). My hope is to turn valence into a method device that, when exercised, destabilizes the conversation about these lawsuits and expands their capacity to make us pause.

My concern is not dissimilar from that of many scholars of the social: both awareness of the complexity of phenomena and attention to the tools used to "simplify [that] complexity enough to make it visible" (Strathern 2005:

xiii). My effort here is to think this by deploying valence in multiple registers. *Small Matter* enrolls insights from chemical philosophy, and valence in particular, as a method device to demonstrate how legal truths are made (and made differently) of complexity. Simultaneously, it deploys valence as a method device to interrupt a legal truth, devoid of complexity, that both an oil conglomerate and the US court sealed into law. In service of these efforts is the valence of this book's structures. Here, form itself hazards to perform some of that work, just as the form makes self-evident my method (and its limits) for generating interruption.

Two points along these lines. First, if methods do not "discover" the real but partake in generating it, then there is no innocent method. As Law proposes, "method is not . . . a set of procedures for reporting on a given reality. Rather, it is performative. It helps produce realities. It does not do so freely or at a whim" (2004: 143). Conventionally speaking, Law continues, standard social science methods rehearse the "silences of Euro-American metaphysics" (118), by which he means the belief that reality is an out-there, preexisting, independent, definitive, singular fact/truth. The human corollary capable of grasping and predicting this reality is the liberal subject endowed with autonomy, reason, sovereign will, and equal right and obligation—the subject of Euro-American law.

Rather than perform the implicit assumptions of a dominant metaphysics, an alternative method might surface what Bachelard called a "metachemistry" (Bensaude-Vincent 2014: 66)—or, better perhaps, a "metachemics"—an understanding of realities that attends to indeterminacy, openness, and techniques of realization.[22] If, as Law writes, "methods always work not simply by detecting but also by amplifying a reality" (2004: 116), then a metachemics might escape the postulate of givens and engage, despite risks, with a world composed of relational fluxes and generative forces—a world composed through valence. Relations have long been an anthropological concern. Yet, as Strathern reminds, "anthropologists do not pursue connections simply to be ingenious. They route them in specific ways" (1995: 11). To "detect" implies attuning to relational patterns—the tensions of valenced combinations—and to "amplify" implies making those patterned relational tensions consequential. Historically, the ethnographic provocation has been to provincialize conventional Euro-American metaphysics and perhaps, as Godfrey Lienhardt observed, to "further potentialities of our own thought and language" (1953: 270). Toward that end, *Small Matter* provokes questions about the tensions inherent in liberalism and the processes whereby liberal legality partakes (or not) in enacting inequalities in the name of law.

Second, and importantly, I did not set out to follow the method rendered here. But now I am in the brilliant company of innovative social scientists enfolding chemical concerns into their work (Barry 2005, 2015, 2020; Fiske 2020; Hepler-Smith 2019, 2020; Liboiron 2012; Murphy 2006, 2008, 2017; Papadopoulos, Puig de la Bellacasa, and Myers 2022; Puig de la Bellacasa 2022; Shapiro 2015; Wylie 2018). Rather than being premeditated, my method emerged recursively. The deeper I delved into this legal saga's layered controversies, the more questions of chemistry appeared. As such, I studied textbook chemistry as I pored over legal case files; I read chemical philosophy as I pored over legal case files; I researched scientific and legal scholarship on toxicology, epidemiology, and law as I pored over legal case files, all the while learning more about the chemistry of crude. Increasingly, I enrolled insights from chemical philosophy and the chemistry of hydrocarbons to make sense of the legal saga as it unfolded and then folded back on itself. Consequently, over the past decade, my research only at times mirrored the face-to-face encounters that conventionally map anthropology's field method. My writing, however, resonates with the discipline's pliable, but honored, textual soul: ethnography. At its best, ethnographic renderings delve into and extend analytic insights garnered from empirical material, deploying them in such a way as to challenge and transform theory and normative insights. Moved by Isabelle Stengers, my method seeks "not to judge, to critique, . . . but to transform critique into an instrument of modification" (2011: 507).

What is the valence (the transmogrifying, combining capacity) of crude oil? That continuously enacted relational-material effect that affects? That bewildering brew of thousands of carbon and hydrogen atoms? That viscous substance that leaves filmy traces as it permeates soils and slips along streams? That indeterminate affliction and alienation haunting local bodies and ecologies? That stuff of numerous legal arrangements and material infrastructures? That object of intense corporate desire as it surges through the earth's upper crust, swells through pipelines, into corporate headquarters, pixelating in digitized stock pricing? *The Small Matter of Suing Chevron* explores the valenced force of crude: that is, the combining, melding, and repelling forces that converged through petroleum to materialize the objects and collectivities at stake in the lawsuit and countersuits. It homes in on the practices enacted by molecular and scientific, statistical and epidemiological, contractual and para-contractual, sensual and prehensive, and inquisitorial and adversarial agencies, exploring how their associative movements through crude acquired resonance, crystallized facts, dissipated claims, and exuded truths.

Some quick, broad-stroke reflection on this account. During the seven-week bench trial, Judge Kaplan, the US judge who delegitimized the 2011 Ecuadorian ruling, ran a disciplined, tight, and exacting litigation. And of all the complexity before him, he insisted on the absolute nature and transparency of facts. Kaplan's eloquent ruling, nearly five hundred pages long, narrates a seamless logic based on facts that he takes as complete, as absolutes. The unquestioning hubris of his own reasoning leaves no room for doubt, no room for unknowns, no room for any possible opening into that which exceeds him and his knowing. If one were to take his ruling, simply for the sake of a thought experiment, as a chemical compound, it would read as an equation in which isolated and distinct facts or elements, each with a precise quantifiable valence, in summation equaled truth. It would be an unequivocal Lavoisierian compound. That is, Kaplan's ruling would be an assessment in which distinct elements when tethered together—through a periodic table notion of their pure and fixed valence—held the identity of the real. This is the purpose and doctrine of law at work. Indeed, Kaplan's fusing with law—the particular legal doctrine he applied and the particular strictures he imposed on courtroom process—was what directed him to know that his "findings of fact" (i.e., his determination of truth regarding the facts presented in the case) were fixed and absolute. The complexity of evidence before the court, however, was richly valenced, composed of "facts" whose dimensionality and contextual richness were unrecognizable or denied within the constraints Kaplan imposed. It took remarkable legal dexterity to transform complexity into fixed fact and legal truth.

What would it mean to see the litigating process and ruling as a non-Lavoisierian chemical process and compound? How might that shift how we think of the elements as not absolute, less fixed, more provisional, perhaps contrived in their apparent stasis? Would those elements look or even be functioning the same? And, if not, what would their mode of existence be?

The seven-year-plus trial against Chevron in Ecuador (presided over by six judges) and the nearly two-hundred-page ruling (or nearly four hundred pages, when double-spaced) rendered by the final judge, Judge Zambrano, were never so disciplined and clear. If they constituted a compound, the elements were never absolute and isolated. They were muddled, at times murky, in their very accruing and congealing. Clearly, the time span introduced space for irregularities to emerge. As did the courthouse context, a small court on the third floor of a rented concrete building in an Amazonian frontier town that the FARC-EP (Fuerzas Armadas Revolucionarias de Colombia—Ejército del Pueblo) historically used for supplies and rehabilitation.[23] The

court had never dealt with a case of this magnitude and was treading water trying to stay on top of correctly inscribing and archiving the proceedings; mistakes happened. Then there were the onsite inspections of alleged contaminated sites, which in all their spectacle and magnificence were replete with difference—for instance, geographic and industrial variation, scientific procedural differences and irregularities, gaping economic disparity, wincing emotive incongruence, and more. In addition, there was the "he said, she said" battle of experts often exacerbated by a corporate intent to meddle in matters and make elements all the murkier. And far from insignificant, corporate litigators and consorts often intimidated through a fawning elitism bordering on racism, an excess of onerous court filings, and instances of outright manipulation through the exchange of favors. Facts were never simply facts.

Curiously, the authoritative humility with which Judge Zambrano's ruling proceeds, while not an elegantly written text, takes care to recognize and provide space for the unknown. In his forthright caution of determinate knowing, he extended an opening for potentialities, for processes that neither science nor the law could know, which the court intuited were more complex and subtle. For Zambrano, there was a clear sense that the controversy and the phenomena at stake (the mixt and its properties) could not be fully deduced from select and isolated parts. The complexity of the mixt exceeded the language of "the sum of its parts." And within the structure of law he allowed for that recognition. Zambrano's judicial rendering lucidly weighs the arguments and precisely delineates wrongdoing, but also it gives weight to ambiguity and phenomena beyond what is known. If it were a chemical compound, it would be a non-Lavoisierian amalgam where the valence of a multiplicity of elements was never absolute, fixed, or even known. Strikingly, despite Zambrano's ruling being upheld on appeal by three Ecuadorian higher courts, this reality (and the inability to understand it) served as a basis on which the US court dismissed and demeaned the Ecuadorian ruling.

Drawing inspiration from chemical philosophy, *The Small Matter of Suing Chevron* delves into this legal saga's distinct controversies and grapples with their intractable complexity. It entrains the capacities of valence to explore how controversy over the toxicity of crude, the health effects of contamination, the question of corporate liability, unorthodox evidence, and judicial procedures exceeded the single-named (because relationally effected) elements that each party proposed in their legal arguments. Enfolded into a mixt, elements transmuted and spun, extending into orbitals of valenced multiplicity with subtending properties, dispersed dependencies, diffuse

qualities, unrecognizable substitution, hidden bonds—qualities that often did not register, or alternatively were disavowed, especially by the constraints constitutive of the United States and tribunal litigations. Constraints, simply to remind, being the obligations and requirements (Stengers 1997) through which, in this case, the law functions.

Deploying valence as a method device means attuning to the sympathies of a discipline long focused on "shifting combinations and open systems" (Barry 2017: 8; Barry 2015). As such, it surfaces dimensions of relationality, movement, and transformation that resonate with Strathern's fabulously generative concept of "partial connections" and Deleuzian/Latourian notions of "assemblage." A shared starting point for these, and likeminded, scholars is that entities—human and nonhuman, organic and inorganic—have a relational ontology or, perhaps better, that all phenomena are relational. Strathern (1988, 2005), among others, would sustain that entities do not preexist the relations that enact them, "nor do they exist apart from the relations out of which they are made" (1995: 102). To quote Annemarie Mol, ontology (always relational) "is not given in the order of things . . . ontologies are brought into being, sustained, or allowed to wither in common, day-to-day, sociomaterial practices" (2002: 8).

Strathern generated the concept "partial connections" to incite reflection on the relational form and to interrupt assumed dynamics of part-whole arrangements: atom and molecule, organ and body, individual and community. When "relations" are thought to "exist outside or between these phenomena," there emerges an "image of the interstellar void traversed by the imaginary lines of a 'relationship'" (1995: 52). Strathern's work destabilizes the idea of entities as being unitary—her Melanesian "dividual" (1988) being an exemplar. The seemingly stable nature of entities (be they persons or materials) shifts based on the kinds of bonds produced through and from them. Thus partial connections can interrupt conventional part-whole visions as when entities (either persons or things) are themselves precarious relations between people (2005: 102), or as when severing peoples creatively propagates relations (111), or as when coordinated relation is mutual realization that tenaciously refuses assimilation (39). The latter is Donna Haraway's iconic female-machine-cyborg—"one is too few and two is too many"—who has spawned inspired thinking. Strathern writes of Haraway's cyborg: "It cannot be approached holistically or atomistically, as an entity or as a multiplication of entities. It replicates an interesting complexity" (1995: 54).

If Strathern's proposal for thinking partial connections is, as Law suggests, "'this' (whatever 'this' may be) is included in 'that,' but 'this' cannot

be reduced to 'that'" (2004: 64), then the imagination of valence I deploy coincides with and also diverges from and extends this figuration. A parallel chemical corollary might be that hydrogen-bonded H_2O molecules constitute water, but H_2O cannot be reduced to water. But other chemical corollaries would deviate, such that "this" is never included in "that" because once "that" is composed, "this" no longer exists (H and O are not in H_2O); "this" partakes in constituting "that" but "this" cannot predict "that" (C in C_6H_6); and, more puzzling, "that," but also "that," and "that," partake in determining "this," but none of those "thats" contain "this" (C_6H_6, CH_4, CO_2 do not include C). This is the felicitous complexifying of partial connections.

Valence as a method device might more explicitly allow for the movement and transformation that Deleuze's concept of *agencement* (Deleuze and Guattari 1987) sought to elicit. If "assemblage" as a concept has come to mean a far too fixed and determined arrangement than was intended, valence might infuse uncertain passage, agitated process, indeterminate unfolding. Like assemblage, valence as combining force is attentive to materiality and it affords a grammar through which to honor materiality's continuously relational changing advent. Reverberations here invoke Deleuze's "virtual": the "material force field" of which complex relations generate an actualization that has "no similarity to an original form" such that "proper novelty" is realized (Jensen 2018: 36). This is the condition of the "mixt."

Valence then, perhaps, speaks less of ontology than "of movement in movement" (Rees 2018: 82) in which pieces (as discrete and isolated entities) have no place. Rather, there are intensities of compositional transmutation that give something else while always keeping the elements as abstractions *in potentia*. Processes of reduction capture components although those components are never essences, never origins. And they are never the compositional movement—the mixt—because the latter is always not what prior was. Thinking with valence is an experiment that hopes "to evoke new modes of relatedness" (Jensen 2012: 52). This is an instance, perhaps, of Andrew Barry's "chemical geography": a worlding composed of "events and situations . . . contingent, contested and frequently inexplicable" (2017: 2, 4).

LATTICED CONFIGURATION

In an attempt to respect the complexity of the lawsuits, *The Small Matter of Suing Chevron* unfolds in different registers. The book is divided into three parts, each containing two chapters accompanied by short interstices. Each "part" ("Dissociating Bonds," "Spectral Radicals," and "Delocalized Stabili-

ties") begins with a short text that, in extending insights from the "Chemical Philosophies" sections above, brings forth a particular texture of chemistry's grammar of valence—that transmogrifying force of combining agencies. This invites the subsequent chapters to perform a figurative chemical fugue. As one analytic movement explores the constellation of material practices that rendered knowledge truths crucial to key dimensions of litigating the case and countercases, another movement manifests a particular mode of complex relationality that valence as a method device might yield. And, with the intention of further holding space for complexity, the interstices obliquely extend or unsettle concerns explored in the adjacent chapters, possibly serving as "interstitial forms that are generative of emergent effects" (Barry 2015: 120).

Part I, "Dissociating Bonds," explores two controversies suffusing the Ecuadorian lawsuit and the bonding orbitals that configured opposing legal arguments. Two movements are at play here in crude's valence of truth. First, that the science on which legal arguments were based—the elements derived and the facts obtained—were bound by and contingent on research practice. They were factitious. A combination of technology and technique, protocol and expertise, and material proximities and propensity effected unique fabrications. Second, far from discrete facts in juxtaposed isolation, the elements of scientific expertise were already enrolled in distant institutional, regulatory, and ethical predicaments.

Chapter 1, "Chemical Agency: Of Hydrocarbons and Toxicity," explores this theme by delving into the controversy over whether crude oil is toxic. Tracing the North/South networks among corporate, regulatory, and academic science, this chapter shows how and why distinct techniques for dissecting the molecular structure of hydrocarbons resulted in conflicting chemical determinations of toxicity. Here the temporal/spatial complexity of hydrocarbon molecules combined with distinct scientific, industrial, and regulatory processes to coconstitute toxicity as a sociomaterial accomplishment. Far from providing certainty, the chemistry of oil proved deeply contentious. Chapter 2, "Exposure's Orbitals: Of Epidemiology and Calculation," probes this theme differently by examining the epidemiological studies indicating or disavowing an association between oil operations and cancer. It evinces a long-standing strategy by US industries (tobacco, most infamously) to avoid liability by producing doubt over the effects of their activities. The specific form this strategy took on Chevron's behalf was unique to the temporality and materiality of oil extraction. But just as importantly—and unrecognized in the mixt—tensions within the field of epidemiology unwittingly

gave traction to the doubt produced, and further entrenched an indeterminacy in the link between crude and ill health.

Part II, "Spectral Radicals," borrows from a form of chemical relationality of triggered chain reactions. It explores two very different moments of legal process that transmuted and spun in ways never anticipated. In one instance, questionable corporate arrangements threatened to foil the very instrument legally created to sustain the corporate form: the legal contract. In the second instance, a bewildering cascade of experiential events haunting the judicial inspections transformed into exceptional and singular forms of prehensive knowing, such that phenomena subsumed experience and transformed beingness.

Chapter 3, "Alchemical Deals: Of Contracts and Their Seepage," examines the concept and practice of the contract form as it unfolded in the litigation. The more the corporation invoked layers of legal contract in order to bring closure to the dispute and preclude its liability, the further the dispute extended. Data and testimony acquired during the judicial inspections suggested that layers of corporate and state contracts were imprecise, spinning the dispute off into parallel espionage inquiries, contract-fraud indictments, and international arbitrations. Chapter 4, "Radical Inspections: Of Sensorium as Toxic Proposition," explores how sensorial processes coalesced to consequential effect in the lawsuit. Over the five-year judicial inspection process, oil's hydrophilic propensity, the design and ubiquity of industrial waste pits, and hundreds of affect-laden testimonies converged with experiential evidence (e.g., the felt slickness of shimmering, oil-laced matter; the visceral recoiling at the smell of crude; the empathic receptiveness to compromised human, animal, and plant life) to generate for the court consistent forms of sensorial knowing not readily available within US courts.

Part III, "Delocalized Stabilities," draws inspiration from the singular form of molecular bonding present in aromatic compounds. It explores the dramatically different process, structure, and tenor of the legal reasoning that stabilized the 2011 Ecuadorian and 2014 US court rulings. Chapter 5, "Plurivalent Rendering: Of Prehension Becoming Precaution," dissects the 2011 $9 billion Ecuadorian judgment. It takes the ruling's argument (easily dismissed in the US court as convoluted and unconventional) seriously and analyzes the statutory foundations and legal logic for how and why the court rendered the largest international liability in environmental litigation history. Faced with scientifically indeterminate yet materially and sensorily uniform conditions across oil-extraction sites, the court joined a cluster of recent civil law rulings in Latin America and beyond and invoked the precautionary princi-

ple as a guiding legal ethic with statutory obligation. The Ecuadorian ruling established a legal precedent that induced extreme unease among extractive industries. And for this very reason, it has been fiercely fought. Chapter 6, "Bonding Veredictum: Of Corporate Capacity and Technique," examines Chevron's successful civil RICO countersuit against the Ecuadorian plaintiffs and their lawyers. In March 2014, a US district judge unversed in Ecuador's legal procedures determined that the 2011 ruling was procured through fraud and thus illegitimate. Filed under the Racketeer Influenced and Corrupt Organizations Act (RICO)—a federal law enacted to prosecute organized crime—Chevron's countersuit represents a novel corporate legal strategy for responding to adverse foreign judicial opinions. It also raises fundamental questions about juris dictum, legal ethics, and translation writ large.

The conclusion, "Metamorphic Reprise: Valence in the Mixt," brings this book to a close by reflecting on the international arbitration that Chevron filed against the Republic of Ecuador before the PCA in The Hague. It captures how an entire legal-fraud worlding sustaining Chevron's corruption narrative rested on a reductive understanding of chemistry and how a constrictively valenced enactment of contract transfigured a national environmental contamination dispute into an international investment dispute in the name of upholding the sacrosanct disposition of the contract form. Despite compelling evidence to the contrary, the arbitral panel of the PCA—an intergovernmental dispute resolution body—found that the republic had breached its bilateral investment treaty and impeached the republic's sovereign judiciary for having denied Chevron justice.

Writing's Orbitals

The Amazonian town hosting the Ecuadorian lawsuit is Nueva Loja, but everyone calls it Lago Agrio. Sour Lake was the birthplace of the Texas Company (i.e., Texaco), the site where, in 1903, two mavericks struck crude in the backlands of Texas and turned their partnership into a major oil producer. Lago Agrio was Texaco's Latin American Sour Lake. The first time I traveled to Lago Agrio was in 1988, at the tail end of Texaco's operations. At the time, decades after its founding, Lago Agrio felt like a raw oil town. Although much bigger and more bustling than when Texaco established it as the company's base of operations, Lago Agrio was still rough-and-tumble. Ensconced in an oil-rich region, the town was marked by potholed, crude-strewn, muddy streets; semi-open sewers; and mildew-ridden, half-built, cinderblock houses whose rebar, jutting to the sky, hinted at the slow corrosion of

soaring dreams. That the town is known as Lago Agrio underscores the entrenched sway that US petrocapital has held there. So strong and confident was that sway that, during the near-decade of pretrial hearings (1993–2002) in US federal court chambers of the Southern District of New York, Texaco extolled the virtues of Ecuador's judicial system and fiercely petitioned that the lawsuit be sent to Lago Agrio for trial.

Over the course of thirty-odd years, Texaco's operations indelibly transformed the northern Ecuadorian rainforest, scoring it with thousands of miles of seismic grids, hundreds of oil wells and waste pits, numerous separation and pumping stations, an oil refinery, and the bare-bones infrastructure essential for petroleum operations. By the early 1970s, a network of roads linked oil wells and facilitated the homesteading of the region by over one hundred thousand humble mestizo farmers, or *colonos* (colonists) (see Center for Economic and Social Rights 1994; Trujillo 1992; Uquillas 1985, 1989, 1993; Vickers 1984; Zevallos 1989). As their lands dwindled from encroachment, many northern indígenas retreated eastward deeper into the forest, while others joined the economic ranks of the non-Indigenous, semi-urbanized, and rural peasants. It is these Indigenous and non-Indigenous people on whose behalf the lawsuit was filed.

I began following this legal saga at its inception. When the case was first filed in the New York federal court in November 1993, I happened to be in Ecuador. At the time, I was conducting my dissertation research in the Ecuadorian Amazon on a separate conflict over oil extraction roughly three hundred kilometers south of Texaco's core operations, working with what was then one of the most consequential Indigenous movements in Ecuador and Latin America in general (Sawyer 2004a). Because of the effectiveness of the political and environmental organizing of this Indigenous opposition, a number of campesino and Indigenous leaders who formed the plaintiffs' group in the lawsuit against Texaco approached Indigenous leaders with whom I then worked. They sought guidance in organizing local residents around the collective effects of oil operations. It was through my collaboration with local Indigenous and environmental groups in the Ecuadorian Amazon that I became connected in the 1990s with individuals who increasingly became key actors in the lawsuit as it progressed over the subsequent twenty-five years.

At the start of the new millennium, I published a few articles on the early stage of the lawsuit. One cluster examined the case during its decade-long life between 1993 and 2002 of pretrial hearings in New York federal courts (Sawyer 2001, 2002, 2009), and another analyzed the opening of the trial in the Amazonian provincial court in 2003 (Sawyer 2006, 2007). But it wasn't

until 2010 that I began to read the exploding case file concertedly and began to conceptualize the project that ultimately became this book. That emergent analytical form shifted my research methodology. Rather than being grounded in day-to-day fieldwork, my research entailed years of studying legal documents and consort scientific literatures in an ever-transforming legal saga. This meant that, although I sustained connections with the plaintiffs' legal team and a number of the plaintiffs over the decades, I was not caught up in the ever-piling intricacies and intrigues surrounding the cases. This distance afforded me space to distill and reassemble this legal saga otherwise.

My compulsion to attend to oil relations exceeds, of course, academic concerns and enfolds consideration of how the exigencies of oil give form to a being. Beyond the complicity that living in the hyper-consumptive North brings, the legacy of oil in South America and North Africa largely shaped the trajectory of my paternal family over the greater part of the twentieth century. My grandfather, uncle, and father each lived and worked for decades in Latin America (although not Ecuador) for Standard Oil of New Jersey qua Esso qua Exxon qua ExxonMobil as an engineer, geophysicist, and geologist, respectively. And I, in turn, grew up around oil.[24] Significant portions of what I know about oil operations come from my uncle (whose research I cite in this book) and from extended conversations and travels over the years with my now long-retired, social justice–oriented father. Paradox, emergence, and surprise suffuse these orbitals of coalescence; they partake in forming the research I have done, just as that research has modestly partaken in altering their trajectory.

Writing any book is no easy task. And this one has presented its own unique challenges that deserve comment. First, the mass of information in this legal saga is staggering and unwieldy—with multiple actions producing immense case files and associated scientific, technical, legal, and social debates together being of equal magnitude. With reason, Chevron hired more than two thousand lawyers from sixty law firms in order to launch its RICO countersuit. I am a team of one. Second, writing about a legal case in a way that fundamentally breaks with the decisions of the US district court and court of appeals is daunting. Ours is a judicial system I respect, despite its flaws, and tracing the persuasive threads of skilled legal maneuvering within it has been sobering. Lastly, writing critically about the practices of the second largest US oil company—with its multiple tentacles—is not for the faint of heart. Litigation is a tool that Chevron has used relentlessly to debilitate, both financially and emotionally, individuals and organizations associated with positions it does not like. Chevron's crushing offensive against the LAP's

US advisor counsel, Steven Donziger, is disturbingly the most egregious. But he is not the only target of the corporation's reprisal tactics.[25] At multiple junctures along the way, these concerns have given me pause. None are to be taken lightly. And, consequently, much care and deliberation have accompanied me in writing this book. I now relinquish that attention to you, dear reader, to judge.

NOTES

Fraud

1 "Chevron/Ecuador: The 'Legal Fraud of the Century' in 3 Minutes," posted March 25, 2015, https://www.chevron.com/ecuador/.
2 This quote is directly from the text of the web page "Ecuador Lawsuit," Chevron website, accessed May 1, 2015, https://www.chevron.com/ecuador/. All other quotes are from the Chevron video cited in the previous note.

Opening

1 *Maria Aguinda Salazar y Otros v. ChevronTexaco Corp.*, Case No. 002-2003-P-CS-JNL (2011-63-1), Provincial Court of Justice of Sucumbíos, Nueva Loja, Ecuador. Ecuadorian plaintiffs filed their complaint on May 7, 2003, in the Superior Court of Justice of Nueva Loja (renamed the Provincial Court of Justice of Sucumbíos). Judge Nicolás Zambrano Lozada rendered his judgment on February 14, 2011. Having merged to form ChevronTexaco in 2001, the corporation changed its name again to Chevron in 2005.
2 *Chevron Corp. v. Donziger*, 974 F. Supp. 2d 362 (S.D.N.Y. 2014), ECF 11 Civ. 0691 (LAK).
3 The following year, the US Supreme Court declined to review that decision.
4 I am indebted to other anthropologists who have intervened in controversies concerning the lethal or less-than-lethal effects of corporate activity: among them are Hannah Appel (2012, 2019), Andrew Barry (2013, 2020), Kim Fortun (2001, 2010, 2012), Stuart Kirsch (2006, 2014, 2018), and Sara Wylie (2018).
5 My analysis in this book is deeply informed by and in conversation with critical studies by anthropologists and kin: Kim Fortun (2001), Aya Hirata Kimura (2016), Lochlann Jain (2006, 2013), Stuart Kirsch (2018), Max Liboiron (2012),

Michelle Murphy (2006), Adriana Petryna (2002), and Sara Wylie (2018). Each of these works explores in distinct spaces and times the tense intersections of modernist production, science, and law. Susanna Rankin Bohme (2014) richly chronicles a notable exception of claims of the marginalized people (in this case from Central America) prevailing against a corporation (Dole) in the US court of law.

6 In November 1993, US-based lawyers first filed the class-action lawsuit against Texaco Inc. (*Aguinda et al. v. Texaco Inc.*, ECF 93 Civ. 7527 [VLB] [S.D.N.Y. complaint filed November 3, 1993]). Three years after its original filing, the case was dismissed from the New York federal court in November 1996. In light of new evidence, the plaintiffs petitioned later that year that the court reconsider its decision. In August 1997, the district court dismissed the case once more. The following year, in October 1998, the US Court of Appeals for the Second Circuit reversed the lower court decision and reinstated the case. Three years later, in May 2001, the New York district court dismissed the case once more. In August 2002, the same court of appeals heard the case again but this time upheld the lower court's decision and ruled the case be sent to Ecuador. In May 2003, the case was accepted in the Superior Court of Justice of Nueva Loja. For ethnographic analysis of the US legal claim, see Sawyer 2001, 2002. See also *Aguinda v. Texaco Inc.*, 142 F. Supp. 2d 534 (S.D.N.Y. 2001); and *Aguinda v. Texaco Inc.*, 303 F.3d 470, 473 (2d Cir. 2002).

7 See the works of Constable (2014a, 2014b) and Cormack (2007) that brilliantly and distinctively explore the matter of truth and the truth of the matter.

8 Etymologically, *verdit* is Middle English from medieval Latin *veredictum* (true saying) from classical Latin *vere* (truly) + *dictum (*a thing said). The term *verdict* is conventionally used in common law to refer to a "jury's findings or conclusions on the factual issues presented by a case," although the term may also refer to a "judge's resolution of issues in a bench trial" (Cornell Law School, Legal Information Institution, accessed June 14, 2019, https://www.law.cornell.edu/wex/verdict). Not all legal dictionaries concur, however, claiming that a "judgment by a judge sitting without a jury is not a verdict" (Gerald and Kathleen Hill, *The People's Law Dictionary*, accessed June 14, 2019, https://dictionary.law.com/Default.aspx?selected=2217).

Despite this equivocation, the United States court, in a "Glossary of Legal Terms," defines verdict as "the decision of a trial jury or a judge that determines the guilt or innocence of a criminal defendant, or that determines the final outcome of a civil case" (Administrative Office of the US Courts on Behalf of the Federal Judiciary, "Glossary of Legal Terms," accessed November 14, 2019, https://www.uscourts.gov/glossary#letter_v).

In Ecuador the term *veredicto*, while less commonly used than *sentencia* or *laudo arbitral*, refers to a ruling of the court.

9 As Strathern notes, "Complexity in this sense denotes systems not just heterogenous in composition but open-ended in extent" (1995: 40). And Law relates that "events and processes are not simply complex in the sense that they are

technically difficult to grasp (though this is certainly often the case). Rather, they are also complex because they *necessarily exceed our capacity to know them*" (2004: 6; emphasis in the original).

10 Strathern's words are "it matters what ideas one uses to think other ideas (with)" (1992: 10). See also Haraway: "It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties" (2016: 12).

11 Feature-length documentary in production, directed by Lindsay Ofrias, produced by Myles Estey, Leo Cerda, and Jonathan Gray.

12 *Maria Aguinda Salazar y Otros v. Chevron Texaco Corp.*, Case No. 002-2003-P-CS-JNL, filed May 7, 2003; Ley de Gestión Ambiental [Environmental Management Law], Official Registry, Record No. 245, Articles 41–43 (July 31, 1999).

13 Ecuadorian tort law, as codified in the 1861 Civil Code (Article 2260 of the Civil Code, later renumbered as Article 2236 [paragraph V.1(b)]), stipulated that an individual or group of individuals threatened by a future risk could sue the offending party and demand the threat be remediated. Although remediating measures invariably would mitigate risk to others in addition to the suing individual(s), no specific legal procedure existed in Ecuador for collective legal action for environmental harm. This was not seen, however, as an obstacle to its enactment.

See also Ley de Gestión Ambiental, No. 99–37. Article 41 of this law reads as follows: "In order to protect individual or collective environmental rights, public action is granted to natural persons, legal entities or human groups to denounce the violation of environmental norms, without prejudice to the constitutional protection action provided for in the Political Constitution of the Republic." Article 43 of the law reads as follows: "Natural or juridical persons or human groups, linked by a common interest and directly affected by the harmful action or omission, may file actions before the competent judge for damages and losses and for deterioration caused to health or the environment, including the biodiversity with its constituent elements."

14 The judges presiding over the litigation, in order, were Alberto Guerra Bastidas (May 2003–January 2004), Efraín Novillo Guzmán (January 2004–January 2006), German Yánez Ruíz (February 2006–August 2007), Efraín Novillo Guzmán (August 2007–August 2008), Juan Evangelista Núñez Sanabria (August 2008–September 2009), Nicolás Zambrano Lozada (September 2009–February 2010), Leonardo Ordóñez Piña (February 2010–August 2010), and Nicolás Zambrano Lozada (August 2010–March 2011).

15 This was the January 26, 2012, opinion of the US Court of Appeals for the Second Circuit, which rescinded an interim judicial ruling by the district court hearing Chevron's countersuit after, on March 7, 2011, it placed a global injunction on the 2011 Ecuadorian ruling (*Chevron Corp. v. Naranjo*, 667 F.3d 232, 234 (2d Cir. 2012); ECF 11-1150-cv [L], DI 644 and 648; 11-1264-cv (CON)). Judge Gerard E. Lynch wrote the opinion. For Judge Kaplan's March 7, 2011, preliminary

injunction, see *Chevron Corp. v. Donziger*, ECF 11 Civ. 0691 (LAK), DI 181. Also available at 768 F. Supp. 2d 581 (S.D.N.Y. 2011).

16 DeLanda is reflecting on Ian Hacking's book *Representing and Intervening* (1983).

17 As the judicial inspections proceeded during the trial in Ecuador, there was suspicion that Chevron had begun to tamper with the samples it extracted. But alleged tampering occurred four years after the inspections began. By that time, substantial amounts of analytic data had already been generated from the analysis of soil and water samples taken by both parties.

18 In writing about chemistry, I draw from the work of Bensaude-Vincent and Simon (2012); Bensaude-Vincent and Stengers (1996); DeLanda (2015); Duhem (2002); Heilbron (2003); Lavoisier (1789); Wallace and BelBruno (2006); and Woody et al. (2012).

19 See also "The Chemical Elements," Elementymology and Elements Multidict, accessed January 14, 2017, http://www.vanderkrogt.net/elements/element.php?.

20 The "laboratory," Holmes reminds us, was originally "the space in which chemists 'elaborated' chemical and medicinal substances"—the workshop for the practice of craft (Holmes 2003: 145).

21 Key thinkers include Bensaude-Vincent (2008, 2014); Hacking (2002); Latour (1988, 1993, 1999, 2005); Law (2004); Mol (2002); Stengers (2005, 2010); and Shapin and Schaeffer (1985).

22 As Bachelard observed, "The real in chemistry is a realization" (cited in Bensaude-Vincent 2014: 66).

23 FARC-EP, or the Revolutionary Armed Forces of Colombia—People's Army, was the guerrilla movement engaged in armed conflict in Colombia from 1964 to 2017.

24 Via kinship, I have been long imbricated in multinational oil extraction since the early decades of the 1900s. My grandfather, Guy H. Sawyer, began his oil career in Bolivia as a civil engineer for Standard Oil in 1921. Subsequently, he worked for Standard Oil in Argentina and then Venezuela until his death in 1948. My uncle, Herbert Sawyer, worked in Venezuela and Cuba in the 1940s and 1950s. As I was growing up, my father, J. Allan Sawyer, worked as a petroleum geologist in Libya (my birthplace) for nearly fifteen years and then in Peru and Panama. And though we moved to the United States just before my thirteenth birthday, he continued to do exploratory work in Venezuela and Surinam. After I graduated from high school, while I worked as a ballet dancer in Europe and then later when I was in college, I visited my parents over an eight-year period in Colombia, Argentina (my father's birthplace), and Egypt.

25 Over the course of this legal saga, a number of individuals in Ecuador and the United States have found their lives rattled in varying degrees by Chevron. While never of great significance, upon occasion, I, too, have experienced Chevron's overbearing reach. The most recent was via the National Endowment for the Humanities (NEH). In 2018, I had applied for an NEH fellowship. My proposal was reviewed by eight external reviewers (more than the norm) and each reviewer rated my proposal "excellent"—the ranking necessary for

obtaining funding. To my confusion, however, the NEH withheld funding from me. The reasons were as follows: "Despite the strong ratings, concerns were raised at later stages of review about the possibility of additional court appeals in the case that is the centerpiece of your project. While the actual legal case seems to be closed, the repercussions might not be. The project seemed premature for federal funding when the final outcome is not yet settled" (NEH email, March 8, 2019). "Premature"? At that point, this legal saga had been transpiring for nearly twenty-six years.

When I made further inquiries, an NEH senior program coordinator kindly looked into the matter and later responded as follows: "As explained in our guidelines and in the application process information, there are three stages of review. The peer review is the first stage, from which you received your project's evaluations. The next stage of review is conducted by the National Council for the Humanities, a presidentially selected body of twenty-six people confirmed by the senate. The final review falls in the purview of the chairman of the NEH, who by law makes all funding decisions. Despite the high peer review ratings, concerns were raised at the later stages of review regarding the pendency of the litigations" (NEH email, March 25, 2019).

The legal details that followed included different events and court submissions made to the Supreme Court of Canada (where enforcement proceedings were being pursued) and the ruling of the PCA (which had yet to make its determination at the time I submitted my proposal in the spring of 2018). Of particular concern apparently was the fact that Chevron in 2019 had only recently submitted the PCA ruling to the Canadian Supreme Court and that this would "affect the narrative arc of [the] project and render a final call premature. Another concern was raised regarding a balanced representation in [the] narrative concerning Chevron and the U.S. court system" (NEH email, March 25, 2019).

When would a 3,000-word application that was ranked "excellent" by eight academic reviewers be deemed ineligible for "federal funding" because details that had yet to occur were not addressed in the application? Any serious scholar following this legal saga would enfold consequential legal events and allow them to shape her analysis. Apparently, someone—perhaps familiar, perhaps not, with my work and connected to the National Council for the Humanities or the NEH chairman—did not want me to write about the Chevron legal saga. It stung, of course, not to be given the support that reviewers believed I merited; the funds and time would have been warmly welcomed. But it also shocked me (perhaps naively) that the NEH would interfere in academic freedom in this way. I share this episode because it is suggestive of the extent of Chevron's tentacles. In this case, those tentacles stretched to undermine both the integrity of the peer review process and the confidence that academics place in it.