CULTURAL ANTHROPOLOGY

GOVERNING DISASTER: The Political Life of the Environment during the BP Oil Spill

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One year after the BP Oil Spill, I followed a caravan of federal officials as they toured the Gulf Coast and explained to local communities how damages to the environment would be assessed and ultimately righted. During these meetings, federal officials fulfilled their mandate to elicit public input on how to fix the environment after a major oil spill. Held in high school gymnasiums and community centers, these meetings were peculiar affairs where industry lawyers, environmental NGOs, and municipal leaders melded with angry residents in a "public" lined up in rows of folding chairs.

Each presentation began with the same line: "First and foremost this was a human tragedy. Eleven workers lost their lives," before pivoting to the point: "But tonight we're going to focus on the environment." The goal of these meetings and the interventions they foreshadowed was explicit: "To make the environment whole again." These meetings routinely concluded with federal officials exhorting audience members to express their vision of an environment restored to normal: "We don't have a manual for how to put everything back together again. We need your help, your input. Are there specific species you want to make sure we pay attention to? Are there specific sites you would like us to focus on?"

An interested public hewed close to this script. At one meeting, a number of suited men read from a memo entitled "Talking Points for Environmental Restoration," authored by an industry group. Each reiterated the same project: scuttling old oil rigs to form artificial reefs. Representatives of environmental NGOs

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urged action on various topics close to their organization's mission: endangered species, wilderness areas, hunting and fishing, or ocean conservation. Equally present were municipal and state officials, pitching projects like sprucing up a waterfront or building a boat ramp as key components of environmental restoration. Most of the public input struck me as pointedly private, consisting of various long-standing agendas repackaged to be newly persuasive in the coming bonanza of restoration.

There was also a different, more dissonant public at each meeting: sickened residents. Their voices, unruly and unvetted, offered a far messier and almost nightmarish accounting of the oil spill. One woman interrupted a meeting by handing out lab reports on her blood: "I have poly-aromatic hydrocarbons in my blood. I need help." One doctor stood and introduced two of his patients: "These men are extraordinarily ill. The oil was in the water and now it's in our blood," he said. "Feel free to question them." For these residents, the imperiled ocean stretches into their bodies. Together, their voices offered an unsettling refrain: we live and work and eat in ways that confuse any hard and fast distinction between an environment and a public. Frustrated by official evasion, one woman asked, "Do you not think the health of environment is related to the health of the residents?" Another woman said, "The water and air are poisoned. The environment is killing us." Federal officials dismissed these comments with the same polite recusal: "This is a meeting about damages to the environment. Your concerns are best addressed elsewhere."[1] (I asked one official charged with formatting public input at these meetings what she did with such comments. "Nothing," she said. "They don't fit.")

Such fraught scenes articulate the emerging categorical fault lines between the public and the environment that underlay the official response to the BP Oil Spill. In this article, I describe the epistemic politics of the environment during this oil spill, its contested boundaries and forceful enactment. This article does not begin after the fact of the environment but focuses squarely on the making (and remaking) of that consequential fact during a major oil spill.[2] Disasters do not unfold within the disciplined fields of knowledge or the settled domains of governance. "Oil spills," I heard Admiral Thad Allen quip at the height of the BP Oil Spill, "are agnostic to political boundaries." Disasters do not abide by the working partitions of research and rule; they establish those distinctions anew (Fortun 2001; Petryna 2002). During the BP Oil Spill, the environment came apart and then was put back together as the experimental domain within which this unprecedented oil spill could be objectified for both scientific quantification and political responsibility (Porter

1995). Following Rosalind Shaw (1992:200) on the anthropology of catastrophe, "The question here is not what *causes* events but their *conceptualization*."

FIXING THE ENVIRONMENT

The BP Oil Spill defined a vital frontier of knowledge. Unfolding nearly a mile underwater and beyond the pale of easy observation and easy capture, it overwhelmed established understandings of both oil spills and the ocean's vulnerability to them. As we now know, less than ten percent of this shockingly large deepwater blowout rose to form a surface slick (NOAA 2010). The vast remainder of this oil spill—roughly 15 Exxon Valdez's—unfolded within the ocean itself. The immense pressure of the deepwater (and the added force of chemical dispersants) broke down the crude oil into its component parts. These parts, in turn, had distinct trajectories. Gaseous hydrocarbons like methane, by far the largest component of this oil spill, dissolved into the ocean or formed tiny ice particles infinitely suspended at varying depths within the water column (Kessler et al. 2010; Valentine et al. 2010). Swept into sub-sea currents, they formed underwater plumes of methane-laden seawater (Camilli et al. 2010; Joye et al. 2011a). Heavier hydrocarbons sunk to the ocean floor coating it in a thick tar (Joye et al. 2011b). Many of the aromatic hydrocarbons, like benzene, rose to the surface and quickly evaporated into the atmosphere, creating ephemeral trails of carcinogenic air that drifted over parts of Louisiana and Florida (de Gouw et al. 2011). The hydrocarbons of this spill were legion. Not only did this situation render the coordinates of the oil spill multiple and frighteningly unbound, it also meant its biological consequences were occurring on the outskirts of the forms of life the state had historically sought to protect under environmental law.

During the BP Oil Spill, "the environment" in need of protection was very much an open and urgent question. Scientific and political consensus over what counts as the environment during this oil spill was not the starting point of the official response but its consequential outcome. Taking the environment as a compelling ethnographic question, I describe the situated debates and novel technologies that sought to bring the microbial and deepwater dimensions of this oil spill into a working correspondence with the historical dimensions of the defendable environment. This process is significant not only for how official knowledge of an oil spill is produced and validated but also for what is left out. The limits of pollution (and its effects) have come to rest not on the outer edges of felt impact, human or otherwise, but on the legibility of such claims within the present constitution of the environment.[3]

The environment, one White House adviser told me in a rushed conversation between meetings at the height of the spill, "is not something you can put a fence around and save." No, she said, the environment is about a proper understanding of "ecological functions" and what threatens them. The urgent "knowledge practices" that coalesce around the governance of the environment, to which both Kim Fortun (2001:7) and Timothy Choy (2011:5) have drawn our attention, are not oriented towards matters of scarcity but problems of vulnerability. Here, the focus is not so much on how environmental issues play out within a larger political economy as it is on the analytical operations that stabilize endangered life as a legible object for uniform measurement and centralized administration.[4] The environment that was twisted and pulled into novel application during the BP Oil Spill was not a strategically distributed natural world, but rather an urgent scientific project to objectify the immediate vulnerability of life for effective governance.

Environmental protections, as I argue here, are not the safeguarding of an obvious place but rather an "epistemic habit" that forcefully instantiates a contingent ideal of life as a technique of mastering pressing disorders (Stoler 2008:350). In a compounding history of usage, defending the environment has been sharpened into a kind of operational common sense that valorizes the quality of ordinary life after the fact of its disruption, and by so doing provides a practical means for both objectifying that disruption and orienting restoration. Following Canguilhem (1991[1966]), it is the unexpected rupture of a disaster that keys us in to what we should have known all along and now must effectively conjure up in its absence: namely, the science of the normal. I take the environment to be just such an ex post facto (political) science of the normal.

MAY 2010: The Environment Must Be Defended

On April 27, 2010, the still uncertain aftermath of the Deepwater Horizon's sinking was designated an "Oil Spill of National Significance" by Secretary of Homeland Security, Janet Napolitano. That formal designation mobilized the Unified Command System and authorized it to take control of the situation. The Unified Command System, at its peak, came to employ "more than 47,000 personnel; 7,000 vessels; 120 aircraft; and the participation of scores of federal, state, and local agencies" (Mabus 2010:2). This infrastructure of response resembles an event-centered government agency, an interdisciplinary department whose authority (and life span) is tied to solving an urgent problem. Unified Command was given exceptional authority to, as I was told repeatedly, "protect the public and protect the environment." These mandates were initially taken to be two largely overlapping operations. Both consisted of keeping crude oil off the coast. However, as the deepwater dimensions of this oil spill slowly came into focus, the protection of the environment became a separate problem that moved away from the populated coast and into the alien world of the deepwater.

The Unified Command System gained its current authority from the Oil Pollution Act of 1990 (OPA). Coming on the heels of Exxon Valdez, the OPA legislated double-hulled tankers, navigational aid for major energy ports, and a more robust means of assigning liability. Indeed, much of the language in the OPA reflects the particular setting of the Exxon Valdez spill and its iconic devastation of the rugged coastline of Prince William Sound. The ocean, for example, is treated as a corridor that can transport crude oil into sensitive sites like beaches or spawning grounds. The ocean is treated not as a dynamic ecological system in itself but as a pathway to human and animal exposure. In other words, the OPA projected a leaking supertanker as the definitive oil spill and animals and beaches coated in crude as emblematic of the environment in need of protection.

Environmental protections in the United States often formalize the historical contingencies of a single disruptive event as the generic conditions of all future disasters. Such risk management, as Charles Perrow (1984), Michael Powers (2004), Stephen Collier (2008), and Limor Samimian-Darash (2009) have demonstrated in different contexts, works to reduce the shifting complexities of the present to certain reified forms, a process that removes questions of temporal and spatial specificity and deploys a now standardized political calculus of technocratic risk. To prevent another Exxon Valdez, the OPA directed federal agencies to join together and prepare for the worst oil spill imaginable. In subsequent statutes and ongoing disaster preparations, Exxon Valdez became the de facto worst-case scenario that the Unified Command System calibrated itself to remedy. The last disaster became the new governing norm.

During the first month of the BP Oil Spill, the protection of the environment largely consisted of a mechanical application of historical insights; namely, what should have been done during the Exxon Valdez spill. Tens of thousands of miles of boom were ordered to line the coast from Texas to Florida while chemical dispersants were readily approved not only for surface application but also for deepwater injection (for which there was little precedent). The logic behind these strategies was the same: protecting the environment was all about preventing crude oil from making landfall. Federal agencies, in other words, sought to protect the environment they already knew how to protect. The orientation of their operations took its cues from historical precedent. "What we apply to the next spill is what we learned from the previous spill," the lead environmental scientist explained to me at the beginning of the BP Oil Spill.

"Most of the technology we are using now was developed in Exxon Valdez," NOAA Scientist Charles Henry told me early on in the BP Oil Spill. Henry had worked in Alaska during the decade following the Exxon Valdez disaster and headed up the environmental science division within Unified Command. The legislative and technological mastery over the problems of the Exxon Valdez spill were apparent in the emergency response to the BP Oil Spill. Unified Command bustled with Exxon Valdez veterans, proudly brandishing their experience in Alaska at press conferences and in planning meetings. The point was clear: they had been here before and they knew what to do. There was a confidence at Unified Command in the early days of the BP Oil Spill that suggested oil spills were all the same. They were generic events that, at least since Exxon Valdez, had been scientifically deciphered. And now any oil spill could be mastered with the right application of technology and operational expertise. Indeed, with advanced degrees in oceanography and experience with the cleanup of the Exxon Valdez spill, many of the personnel of Unified Command described themselves to me as experts in "the science of oil spills."

The limits of this official science of hydrocarbon disasters soon became apparent. "The oil spill regulations written after Exxon Valdez were written for the next Exxon Valdez," Admiral Thad Allen, who headed up Unified Command, told a group of congressional aides and federal regulators in Washington, D.C., a few months after the BP Oil Spill. "In retrospect, OPA is one hell of a tanker-centric piece of legislation." The oil spill he dealt with, he explained, was a deepwater blowout that was "indeterminate and multidirectional, it was disaggregated and going in different directions." He summarized: "We could barely keep up with it." The effects of the BP Oil Spill, both at the underwater site of the blowout and in the immense scale of the spill itself, soon surpassed the legislated and practiced norm of the defendable environment.

As the BP Oil Spill continued unabated into its second month, one official told me, "We knew how to respond to a surface spill, but this is completely different." This was, another official told me, "an unprecedented disaster. It was unprecedented in its location, its length, and its magnitude." As one scientist working with NOAA later summarized, "Exxon Valdez released oil on the surface for about 12 hours. This spill has been going on a mile underwater for nearly three months now." The urgent task became one of getting a handle on the size and shape of this disaster, and only then turning to the question of how the diffuse dimensions of this spill fit into the political mandate to protect the environment. The focus of the emergency response shifted from coastal protections to deepwater questions. This change in the registers of the disaster, like the "shifting experimental regimes" of nuclear testing described by Joseph Masco (2006:96), worked to quietly abstract the oil spill from human considerations. Atomic explosions, once moved underground and encased in layers of technological representation, became increasingly difficult to recognize as weapons. As the official response to the oil spill shifted to the deepwater and the technological mediation it demanded, it became increasingly difficult to link the oil spill to questions of public health.

JUNE 2010: The Sciences of an Oil Spill

The BP Oil Spill became the recipient of urgent scientific questions without first being stabilized as a clearly defined scientific object. Perhaps this is always the case with disaster; the pressing task of knowing how bad it is precedes any agreement on what counts as valid data. In disasters, like in the history of science itself, analytical practices unfold beyond the clearly defined norms of a scientific community (Shapin 1995). The deepwater, a very acrimonious and publicized topic, was at the very crux of this uncertainty during the BP Oil Spill. "Underwater plumes" were headline news. As reported, this was a standoff of sorts between political bureaucrats and academic scientists, and the story often leaned toward a tale of government incompetence. Up close, this debate was something else entirely. Media coverage skirted two details. One, this was not politics versus science but a debate between two groups of marine scientists; one affiliated with federal agencies, the other with research universities. Two, the content of this debate came to rest on an exceedingly practical question: which sub-sea device was best suited to monitoring dispersed hydrocarbons in the deepwater?

During the second and third month of the BP Oil Spill, academic scientists working in the Gulf independent of Unified Command began to notice cascading changes in the ocean itself. These scientists began with a precise but limited sense of various niches or species within the ocean: as they noticed specific disruptions in their field of expertise they began rethinking the dimensions of the oil spill and the environment it imperiled. Fluent in the interrelatedness of the ocean, they began working out a plausible link between microbes, the oil spill, and shifts in the chemistry of the deepwater. Microbes consume hydrocarbons by drawing them into a chemical reaction with oxygen. This biologically mediated reaction consumes hydrocarbons and oxygen and produces carbon dioxide. As they break down oil, microbes alter the chemistry of the water in durable ways. Focusing on the altered chemical and microbial state of the deepwater, marine scientists devised their own means of discerning crude oil. Collating the effects, they redefined the cause. These emerging definitions, while illuminating the specific properties of diffuse hydrocarbons in this spill (and its shockingly large scale), were at odds with Unified Command's more established means of locating and remediating crude oil in the ocean.

Although they shared degrees and a basic analytical language of the ocean, marine scientists working in research universities and marine scientists working in federal agencies differed on how they produced new knowledge about the BP Oil Spill. Academic scientists sought to produce *disciplinary facts*, focusing attention on documenting the specific impact of dispersed hydrocarbons on the ecological niche or species they knew best. Government scientists, in contrast, sought to produce *operational facts* that could help rein in an unfolding event, focusing attention on proven technologies of surface measurement and capture of an oil spill. This difference was widely discussed and palpable in operational meetings throughout the spill. Academic scientists often described themselves as belonging to a "research community" while government scientists emphasized their commitment to solving real problems with science.[5] Although both groups of scientists positioned the significance of their work in relationship to the environment imperiled by the BP Oil Spill, the respective venues of their research shaped how they initially saw the oil spill.

JULY 2010: The Technology of Consensus

The debate between these two venues of science, played out in conference rooms during the oil spill, eventually led to a working consensus on which technologies to use to measure the deepwater dimensions of this oil spill. On its face, this consensus was premised on the growing need to establish a standard metric for detecting sub-sea oil that could be applied uniformly across the entire Gulf of Mexico. Yet something else occurred as well. Agreement on the key technologies to measure the disaster also rendered the deepwater as a stable (and now sequestered) field of calculation for those devices (Pinch and Bijker 1984; Callon 1989). The practical metrics of the chosen technology mapped out the deepwater of the Gulf of Mexico as a static grid of vulnerability within which disruptions could then be scientifically documented and validated; these technologies produced the deepwater as the environment.

At least initially, scientists working with Unified Command were reluctant to monitor the impact of dispersed oil in the deepwater if nothing could be done about it. Their mandate was to protect the environment; research that could not "yield real-time operational results," as one directive put it (USCG 2010), had no place in the emergency response (and the resources of that exceptional authority). "We are not assessing the long-term impacts to the environment," one scientist working with Unified Command told me as the oil spill stretched into its third month. "We are addressing immediate threats to the environment that we can mitigate and amend." "Everything we do in an emergency response," another government scientist said, is tied to "decision points" or "actionable levels." (I overheard one federal scientist paraphrasing it this way: "We can only act if we can do something about the threat.")

Right now we are "looking for oil that can be remediated," one government scientist told a group of academic scientists at another meeting during the oil spill. "The other discussion is the ecological impact of the oil," he added. "That discussion will happen later." A bit later an exasperated official responded to continued critiques over the lack of attention directed to dispersed oil in this way: "There is nothing we can do about deepwater plumes. We can't pump that oil out, that's a mile deep!" For the first few months of the BP Oil Spill the mandate to produce useful knowledge led government scientists (and federal officials) to actively exclude microbial and chemical evidence of deepwater plumes of hydrocarbons. Microbiology in the deepwater was not part of the defendable environment. As evidence of that alien disruption grew, however, the form of the defendable environment was destabilized.

Marine scientists working in research universities first discovered dispersed hydrocarbons in the ocean by creatively repurposing a Florometer. When I asked one academic scientist if the Florometer was intended to work in oily water, he laughed, "None of our equipment was designed to work in an oil spill." Another told me, "Oceanography isn't supposed to have oil in it." The Florometer was originally designed to provide instant monitoring of the organic (i.e., carbon) composition of water, which indicated the presence of plankton or algae, by emitting fluorescent light and monitoring the colors reflected by the water. During the BP Oil Spill it was retrofitted and recalibrated to indicate the presence of dissolved or dispersed hydrocarbons in the deepwater. The improvised use of the Florometer by academic scientists quickly became the basic technology through which the underwater dispersal of hydrocarbons could be seen in the ocean's depths (and sampled for laboratory analysis). Although few if any ever intended to study a deepwater blowout, marine scientists in research universities possessed the technology to see the basic medium of just such a disaster: namely, hydrocarbon-saturated seawater.

Reflecting on these innovations, one marine scientist talked about how exciting this new "interdisciplinary research" was. "All the major experts are on board," he said. "We have unfolding and flexible research plans that can adjust to preliminary results. The Florometer can find the oil. Biologists can see what it's doing. Chemists can figure out where it's from." Running simultaneous tests and adjusting the research plan to the results, he said, has led to a "broadening of techniques" to understand the deepwater environment. "Academics and industry have broadened their techniques. Unified Command needs to catch up." Academic scientists were quite clear about what this technology and the insights it enabled meant. The BP Oil Spill, Oceanographer David Hollander told CNN (August 17, 2010), has "changed the paradigm of what an oil spill is from a two-dimensional surface disaster to a three-dimensional catastrophe." "Through this all, we have witnessed an aged and untested bit of dogma dominate response decisions: Protect the beach," Oceanographer Robert Carney told National Geographic (August 19, 2010). "Quite obviously, it is the whole ocean that we must protect and effectively manage." Although there is a "gut reaction" to crude oil on the surface, marine scientist Samantha Joye told me, "I think when all the data is in, the subsurface effects are going to be far, far more extensive and far, far more long-term than the effects of the oil that made it to the surface."

As it became clear that most of the crude oil in this spill neither made it to the surface nor threatened coastal areas—a NOAA report in September 2010 found that less than ten percent of the spilled oil was recoverable at the surface—the federal mandate to protect the environment was tentatively shifted from coastal protections to figuring out where all the oil went (NOAA 2010). In late August, Unified Command released a subsurface "detection, sampling, and monitoring strategy." Although this directive aimed to produce actionable data, it chronologically and operationally separated the question of where the oil went from the question of what could be done about it. "Monitor and assess the distribution, concentration, and degradation of the remaining portion of the oil that remains in the water column and/or bottom sediments" became an operation in and of itself, and one that preceded the subsequent task: "Identify any additional response requirements that may be necessary to address remaining sub-surface oil." Mapping the scope and subsurface movements of the spilled oil became part of the emergency response, even if nothing could be immediately done about it. This, it bears pointing out, was an unprecedented operation. The deepwater is an extreme environment; it cannot be surveyed in its entirety but rather must be sampled at precise points and general conclusions drawn from those samples (Helmreich 2009).

Unified Command set up a series of meetings between academic scientists who were researching the deepwater movements and effects of the oil spill and scientists working in federal agencies responding to the spill. The goal of these meetings was to establish sampling standards for locating and measuring dispersed hydrocarbons in the deepwater. At one meeting, a government scientist vented his frustration: "How far should we track and map the oil? Part per million? Parts per billion? Part per gazillion? You get to a point where you are chasing things that aren't real." The academic scientist countered, "Dispersed oil is still toxic, we're seeing real toxicity." At another meeting, an academic scientist asked, "Toxicity levels for tropical species might be lower than our capacity to measure. Can we detect what we need to detect?" When I ask Steve Murawski, a NOAA scientist working with Unified Command, about new efforts to monitor hydrocarbons in the deepwater, he told me, "It's a mile underwater. It's extremely hard to characterize what's going on down there. And Unified Command wants to know for certain." That certainty came to rest on the limits of technology that could be widely and uniformly applied. This was not a matter of how fine a scale or far away the effects of oil could be seen, it was the far more practical question of how to monitor and measure the deepwater in a standardized manner. As Lorraine Daston and Peter Galison (2007) might suggest, it is the agreed-upon way of looking into a disaster that transforms it into something amendable to objective knowledge.

AUGUST 2010: Placing the Problem

In the weeks after the wellhead was capped, the emergency response began focusing its resources on the technical stabilization of the deepwater. "This oil spill is maturing a lot of technology," Steve Murawski said at the last meeting between academic and government scientists. He referred to the Florometer but also played up the increased usage of remote sensors and underwater gliders. These new technologies of automated surveillance, he noted, "are a whole lot cheaper than taking a boat out and splashing water." And, unlike Florometers, they can be calibrated to a common standard.[6] "There's been a real economy of technologies here," he said, describing the way the improvised use of the Florometer had cracked the door to a new dimension of environmental impact and fostered the development of more rigorous monitoring and measuring technologies. "We've had to change technologies throughout this process," he continued, and now it is time to settle on the best available technology and put it to work on an immense scale. He laid out new plans to place remote sensors throughout the deepwater on a grid organized around the wellhead. Subparts per billion of select hydrocarbons would be the effective threshold.[7] We need "a statistically valid sampling plan" for the entire Gulf of Mexico, he said, and we need "to format the data so it is compatible" with all other research operations working to "determine where the oil is in the environment." "We will sample until we have a good representation of where the oil is." The goal, he concluded, was to produce commensurable data on the full width and breadth and depth of this oil spill that could be housed within a single database. "Putting a complete picture together is key," he said.

During the BP Oil Spill, the affected ocean was, in a way, transformed into a scientific laboratory within which the true size and scope of the oil spill could finally be mastered. This "laboratorization" of the Gulf of Mexico (Callon, Lascoumes, and Barthe 2009:65), again, had less to do with documenting the outer reaches of hydrocarbon effects than it did with the technological monopolization of method and its implicit consolidation of hydrocarbon facts (Latour and Woolgar 1986[1979]; Pinch and Bijker 1984). The materiality of the oil spill was redrawn around the technical capacity of select devices. This technological consensus transformed the varied scientific inquiries that gathered around the oil spill into a "science for policy" of the oil spill (der Sluijs, Eijndhoven, Shackley, and Wynne 1998:315). That is, agreement on how to measure the oil spill was also an agreement to understand the oil spill in a way that leaned toward the pragmatics of state management (Jasanoff 1990; Lahsen 2009). Scientists who wanted their work to be relevant to the emergency response (and the enormous resources it offered) had to discipline their questions and findings into the technical configuration of facts deemed legitimate by the state.

Disasters, as Kenneth Hewitt (1983:10) argued some thirty years ago, "are made manageable by an extreme narrowing of the range of interpretations and acceptable evidence." The environment, first overwhelmed by the fractured quality of this deepwater blowout, was adjusted to contain this multivalent disaster as an unequivocally singular event. Reworking the baseline conditions of the ocean around the background detection capacity of select sub-sea devices, the environment was expressed as a standardized grid of sub-sea chemical conditions against which the BP Oil Spill could finally be seen as a discrete disruption. It is, as Hewitt (10) put it, this "careful, pragmatic, and disarming *placement* of the problem," which comes to "fix" disaster in both senses of the word: it bounds the disruption in time and space and orients recovery. Such fixing also produced a new boundary between the oil spill and everything else. The BP Oil Spill changed from a sprawling mess into a manageable problem by being lodged within a refined deployment of the environment. This placement of the problem, as Tim Forsyth and Andrew Walker (2008:233) have described elsewhere, provides "a seemingly neutral justification for selective state action." It was, to borrow a phrase from Theodore Porter (1995:8), "a way of making decisions without seeming to decide."

THE NEW NORMAL

In the aftermath of the Santa Barbara oil spill of 1969, sociologist Harvey Molotch suggested that disasters are opportune moments for scholars because they expose the underlying social relations that in ordinary times would be blurred or inaccessible. "This technological 'accident,' like all accidents," Molotch (1970:131) wrote, "provides clues to the realities of social structure (in this instance, power arrangements) not otherwise available to the outside observer." Disasters, William Torry (1979:517) summarized in a review article in *Current Anthropology*, "draw into sharp relief a variety of fundamental processes less easy to observe or interpret in more ordinary times." This insight has been amplified in a growing body of scholarship in science and technology studies (STS) that suggests disasters are "normal events" in so far as they reveal the otherwise ignored embeddedness of technological risks within the social (Perrow 1984; Jasanoff 1984; Vaughan 1997; see also the February 2007 issue of *Social Studies of Science*). Disasters are technopolitical exposés of the highest order. In this article, I have argued in a different direction. Destruction, as Ann Stoler (2013) has recently insisted, has its own rippling creativity. While disasters may reveal entanglements we long suspected, they also work to resignify and order the impacted world anew (Erikson 1976; Das 1995; Vaughn 2012). Disasters, then, not only reflect an "extreme version of everyday life," as Edward Woodhouse (2011:61) put it, they also instantiate new knowledge of life.

"We know terribly little about what the deepwater was like before the spill," one marine scientist told me. The chair of the national commission investigating the oil spill has said as much: "One thing we learned is how little we know about the basic environment in which the crisis took place." (Or, as a lab technician testing water samples from the oil spill explained to me, "I love science, but this is one fucked-up science experiment. There is no control.") In fact, much of what we now know about the deepwater is, in many ways, a direct result of the BP Oil Spill. "In the last three to four months there has been an upsurge in knowledge about the

Gulf. We understand the Gulf better now than we ever have," one NOAA official told me. For the first time, there is uniform data on the microbial and chemical composition of the deepwater across large swathes of the Gulf.

This emerging "environment" of the BP Oil Spill is fast becoming an immensely productive field for new forms of scientific inquiry and political responsibility. "Our toolkit has evolved tremendously in this spill," one Unified Command official told university officials several months after the wellhead was capped. "The bottom line is we need to learn from this one, we need new knowledge," he said, announcing a $500 million research initiative in the Gulf of Mexico to study the environmental impact of the spill.[8] More recently, the U.S. Department of Justice announced that nearly half of its criminal settlement with BP would be earmarked for environmental projects in the Gulf. In response to this "unprecedented environmental catastrophe," U.S. Attorney General Eric Holder explained that $2.4 billion would be "dedicated to environmental restoration, preservation, and conservation efforts" in the impacted region (November 15, 2012). This burst of funding, attention, and data, I suggest, is less a definitive accounting of ordinary biology in the Gulf of Mexico than a persuasive mapping out of a new domain of calculation and administration. It is a cogent instantiation of the new normal.

AFTER THE FACT

Disasters are productive events. Recently, popular (Klein 2007) and scholarly (Gunewardena and Schuller 2008; Lakoff 2010) attention alike has focused on the ways disasters can open the door to neoliberal restructuring. Less attention, perhaps, has been paid to the epistemic urgency of disasters; that is, how disasters demand to be thought and the social consequences of how they are thought. Following Canguilhem, I have shown how the official response to disasters like the BP Oil Spill cultivates a fixed understanding of normal life.[9] This instigated normality both works to define the extent of the disaster and offers itself as a platform of sorts for subsequent scientific, political, and ethical projects (without, in either case, becoming an object of much scrutiny).[10] In more ways than one, the last disaster becomes the new governing norm.

The environment—the knowable and governable conditions of life—is not some staid figure but rather an unruly process continually given new delineations and new momentum by unexpected disruptions, like disasters (or the threat of disasters; see Masco 2010). During the BP Oil Spill, the environment came apart and was put back together again as the constitutive normal that reined in the disaster. Staying close to the embedded operations of the state during the oil spill, the emergent environment described here is neither a culturally bounded nor fenced place but an expedient assemblage of sampling devices and their detection capacity. As I have shown, these devices articulated a working definition of the baseline conditions of life that both objectified the disaster and oriented scientific practices within (and after) the disaster. The critical question of the constitution of normality, then, is not always one of the intentional impositions of power but also one of the distribution and density of monitoring technologies. Quietly orienting the state's forceful considerations as well as its averted gazes, these sovereign networks of sampling devices enliven the governable environment (Allen 2003; Fortun 2012). Within such networks—far more proprietary than emancipatory—disaster (or even danger) is depicted not as a risky calculation tangled up in industrial investments and demographic expediency but as a disembodied scientific object measured against an implemented baseline.

Almost a year after the BP Oil Spill, I traveled to D.C. for a meeting among federal agencies to reflect on how threats to the environment were addressed during the spill. In a marbled hallway afterward, I ended up at the cookie table with the senior official that headed up efforts to protect the environment during the spill. He explained that although this deepwater blowout initially overwhelmed the emergency response efforts, its impact was eventually brought into sharp focus with the right science. "This is the problem of science. We put together a model, find the limits of that model, and then build a better model," he said. "As bad as this oil spill was, it's been great for science."

ABSTRACT

This article presents an embedded analysis of how scientists and federal officials scrambled to get a handle on the deepwater blowout in the Gulf of Mexico. Taking the environment as a compelling ethnographic question, it shows how the oil spill and the environment are not given objects that then collide during a disaster, as is commonly assumed in "disaster studies." Rather, crude oil and the environment are unstable fields instantiated and made politically operable in relationship to one another. The BP Oil Spill went from a sprawling mess into a manageable problem by being lodged within a refined deployment of the environment. The ocean was, in a way, transformed into a scientific laboratory within which the true size and scope of diffuse hydrocarbons could finally be mastered. Such placement not only objectified the oil spill, it also quietly defined what knowledge of the disaster and what relations to it could have credibility. The revised environment fully contained the disaster, insulating the biological reach of this oil spill from human considerations and rendering personal accounts of sickness implausible and illegible. Techniques of sequestering and inspecting the oil spill came to underwrite a

new regime of disconnection between the disaster and the public. [environment, oil spills, disasters]

NOTES

Acknowledgments. Special thanks are due to the marine scientists and federal officials who, time and time again, allowed me access to their laboratories and operational meetings where the scope of the BP Oil Spill was an active and unfolding problem. Whatever else might be said of the official response to the BP Oil Spill, it must be emphasized that everyone I encountered was committed to acting in an open and transparent manner. My inquiries, along with so many others, would not have been possible otherwise. When I first met Kim Fortun, this paper was but an image of an encounter I could not shake. Twice, Kim invited me to think out the convergences of disaster and the environment that I witnessed in a forum of interested and interesting colleagues, first on a 4S panel and later in an invited lecture at Rensselaer Polytechnic Institute. Both events (and their participants) proved instrumental in the development of this paper. Conversations with Janelle Lamoreaux, Valarie Olson, Janet Roitman, and Sarah Vaughn helped focus and calibrate my argument. Reminding me that teaching is not only a wonderful boon to writing but also an integral part of that conversation that is scholarship, students in my "Nature in the Americas" seminar at Woodbourne Men's Correctional Facility responded to early formulations of this argument with rigorous questions and piercing assessments. Lucas Bessire and Carrie Gettmann read more versions of this paper than I care to admit; their incisive suggestions made it better each time. Two anonymous reviewers gave this piece a very sharp reading; it was truly a delight to respond to their engaged comments and queries. I especially want to thank Anne Allison and Charlie Piot for their thoughtful encouragement from first submission to final revision. Ann Stoler, as always, proved a daunting critic and relentless champion of this project; this paper would never have seen the light of day without her support. If anyone should ask, all remaining shortcomings are entirely my own. I am very happy to acknowledge the support of the National Science Foundation (NSF) and the American Council of Learned Societies (ACLS).

1. It is worth noting that there is no other federal venue for these concerns to be addressed. The Health and Human Services (HHS) longitudinal health study of the BP Oil Spill was restricted to emergency workers. Economic aid was focused on those businesses that lost customers due to the spill (and could prove it). In both instances, ordinary people sickened in the aftermath of the spill were excluded from official concern. The environment, actively revised during the spill, became an obvious venue where many sickened people came to try and make their ailments intelligible to the force of the state.
2. Cultural anthropology has a long, if somewhat estranged, relationship with the environment. Not all that long ago, cultural anthropology took itself to be first and final author of the environment (Steward 1955; Rappaport 1968; Harris 1979). As anthropologists have since stepped back from their analytical fixation with the natural conditions (or rather, conditioning) of social life, other authors have stepped in. Today, numerous projects seek to fix the environment for a variety of concerns, from conservation projects (Walley 2001; West 1982; Lowe 2006) to social movements (Milton 1993; Brosius 1999; Little 1999) to the worldly labor of peasants (Raffles 2002), indigenous communities (Balée 1994), or even corporate campaigns of social responsibility (Welker 2006). The anthropology of the environment, it might be said, has shifted from trenchant expert into tentative witness, not so much defining the environment in absolute terms as describing the proliferating forms of the environment (Choy 2005). This promising field carries the unresolved difficulty of sorting out the specific relations between the presences of the environment, especially when it comes to the nation-state's ongoing reification of the environment. Not all environments are articulated equally, as students of environmental justice know all too well.
3. The environment, like the economy, is remarkably new (Mitchell 1998). Over the course of the past century, the "environment" shifted from an erudite synonym of "surroundings" to a proper noun worthy of its own governing agency in nearly every nation-state (whether that domain is called *environment*, *medio ambiente*, *mazingira*, *lingkungan*, or *huanjing*). While each instantiation

has a decidedly local inflection—from forests in India and Romania to water in Bolivia and Uganda to sustainable development in Australia and Argentina to tourism in Namibia and Madagascar to rural affairs in England—each is also put to work rendering disparate biological aspects of specific countries amendable to state governance and commensurable for international forums. This emergent environment, enshrined in the national singular of protective legislation and institutional practices, then parallels the rise of the national economy as a consequential domain that depicts the vital conditions of each nation-state in a broadly legible manner (a legibility enhanced by its achieved distance from embodied perspectives and historical relations) (Miller and Rose 1990; Mitchell 1998).

4. A number of critical theorists have suggested that the rise of capitalism itself is what renders nature discrete, either as the finite content of the insatiable commodity form or as a serene landscape desired by those whose affluence rests on social unease. The governance of nature, in much of the resulting research, often then centers on "natural resources" like forests or fisheries or even idealized places of nature whose emblematic scarcity has made them a consequential problem (and constitutive power) for the state (Peluso 1992; Watts and Peluso 2009; Robbins et al. 2007). The theoretical dimensions of the commodity are at the forefront of this research, helping bring the distributive logistics and exclusionary logics of natural resource management into clear focus. There is much to be excited about in this research. One point I would like to make, however, is the manner in which such theoretical commitments quickly—perhaps too quickly—interpret the governance of the environment as bringing yet another lively alterity into the sober discipline of the commodity (e.g., West 2006). The emergence of the environment in the United States, I would argue, was less a strategic response to depleted natural resources than it was a series of urgent reactions to industrial disasters (and the knowledge of life's vulnerability they incited). The ultimate effect of the governance of the environment may very well be the uneven distribution of natural resources, health care, public intelligibility, etc. But the cause, as I suggest here, following Agrawal (2005), Escobar (2008), and Mathews (2010), should be analyzed as a political formation not immediately reducible to what we already know of the commodity.
5. As a recent Ph.D. in marine science working for Unified Command explained, "Marine science in NOAA is a totally different culture than academic science. I feel really constrained sometimes, but maybe in a good way. Science here is not, I found this so I wonder about this and that and these other things. It's not open-ended. No. Science here is more like we need to know this specific thing. And nothing else. How can we know it? Science here is more about connecting dots."
6. The problem with the Florometer, for Unified Command, was that it had been tinkered with and adjusted to work in an extreme deepwater environment saturated with hydrocarbons. The devices worked, but each worked in a unique way. "Too much emphasis has been put on the Florometer as a prospecting tool," one Unified Command official told me. "In terms of the calibration and validation of instruments, all Florometers are different." "A Florometer produces a signal, not hard data," another official told me. "To be a fact requires uniform sampling and laboratory testing." ("None of our equipment was designed to work in an oil spill," one academic scientist responded.)
7. Sub-parts per billion, as in 0.25 ppb; anything below that relied more on personal ability to manipulate equipment in the laboratory and could not be easily standardized. Practically, as one official said, "our current analytical capacity can't track it further than 10–20 km" from the wellhead.
8. "BP has committed $500 million over the next 10 years to this thing called science," a BP official noted. Previous funding for marine science in the Gulf of Mexico was less than $10 million annually.
9. What Canguilhem says of disease also, I think, holds true for disasters. "Disease reveals normal functions to us at the precise moment when it deprives us of their existence," Canguilhem (1991[1966]:100–101) writes, "Diseases are new ways of life."
10. This relation of disaster to an ex post facto normal is something that American anthropology has some familiarity with. From Lewis Henry Morgan to many students of Boas, the impending

doom of indigenous communities shaped the analytical practices of anthropology. (In his review of the anthropology of disaster, William Torry [1979] suggested anthropology's long acquaintance with culture under duress offered practical insight into how to study a disaster.) For that previous generation of anthropologists, the pressing task was one of collecting whispered remnants and then carefully reconstructing the autonomous whole that must have existed just before the interventions of empire (and ethnology) arrived. Anthropologists salvaged the baseline of social life as it presumably wasted away. While such an isolated and idealized normal carried dubious epistemological commitments—namely, a principled avoidance of historical entanglements (Wolf 2011; Fabian 1983)—this formatting of normality has proved rather effective for other tasks. The resulting depictions of "normal life" have since found a curious afterlife within many of the communities depicted, not so much as dated portrayals of social life but as fixed definitions of authentic life (Clifford 1988). Such objectifications of normality, analytically framed as separate from the impinging destruction that made them interesting in the first place, have become a rather handy guide to carving out exceptional spaces of political becoming in the present (Bessire 2013). We are only just beginning to realize the rippling consequence of those urgent measurements of normality instigated by disaster; that is, how an emergency baseline can later come to operate as a potent subject position (Cepek 2012) and a persuasive modality of governance (Fassin 2012).

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