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## Of Lobsters, Laboratories, and War: Animal studies and the temporality of more-than-human encounters

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### **Abstract:**

For over two decades, geographers concerned with undoing what Judith Butler (2009) has referred to as “the conceit of anthropocentrism” have brought animals in from the margins of thought. Geography’s contributions to animal studies have been diverse, but a key consideration has been a retreat from thinking with animals, toward a plural more-than-human analysis. A recent privileging of “spaces of encounter” with nonhuman others challenges the significance of animals altogether, enjoining them to other nonhuman entities—along with nonliving processes, the movement of molecules, viruses, forces, and affects that circulate and connect in ‘events’ and ‘sites’—on the terrain of ethical and political conflict. There is much at stake here in how geographical methods are carried out as well as how response, analysis, and political action proceed. In what follows, I reflect on field notes from an ethnographic encounter with lobster experimentation in a neuroscience laboratory to contrast thinking ‘with animals’ and ‘with encounters.’ I assess the implications of each for transforming who and what we consider in ethical and political terms. I find that while the encounter moves beyond the limitations of more traditionally defined animal studies, a corresponding focus on the present loses sight of wider temporal and spatial relations--including the political economies--that are relevant to the elements in any encounter. Drawing on Boaventura de Sousa Santos, I argue for a geography of the encounter that “expands the present” rather than residing in it, with consequences for the ‘new materialism’ movement. In the case of the lobster experiment, this leads me to consider how scientific practices with animals are also immediately a part of ongoing trends in the US that ‘militarize’ biological life. In conclusion, I argue that concern for animals in the laboratory ought to expand to include concern for past and future political conditions of life, death, and the production of knowledge.

**Keywords:** Encounter, Event, New Materialism, Animal Studies, Ethics, Militarization

## **Of Lobsters, Laboratories, and War: Animal studies and the temporality of more-than-human encounters**

Pleasant is it also to behold great encounters of warfare arrayed over the plains, with no part of yours in the peril.<sup>1</sup>

-Lucretius, *De Rerum Natura* (WHD Rouse translation)

### **1. Introduction**

How ought we live with creatures whose bodies, forms, and functions are alien to our own? Or, as Kathryn Yusoff has recently put it, how are we “to relate, to write, to sense, and to make intelligible that which is beyond [us]?” (Yusoff, 2013, 209). These questions are not merely academic: how we answer them grounds our political and ethical commitments to the world and those with whom we share it, whether human or otherwise. Indeed, climate change and other ecological concerns demand that we reconsider our commitments to what Judith Butler has referred to as “the conceit of anthropocentrism” (Butler, quoted in Antioello and Farneti, 2009: np). To that end, geographers have taken up the task of making “intelligible those beyond us” in part by drawing nonhuman animal life in from the margins of scholarship (for example, Wolch and Emel, 1998; Philo and Wibert, 2000; Whatmore, 2002; Bingham, 2006; Greenhough and Roe, 2011; Davies, 2013). As Henry Buller’s recent progress reports in *Progress in Human Geography* demonstrates, however, centralizing nonhuman animals often raises more questions than answers (Buller, 2013; 2014). Among a number of conceptual difficulties, attempts to dismantle assumed species hierarchies often reify others. As Myra Hird has noted, for example, the vast majority of animal studies texts prioritize organisms that are “big like us” (Hird, 2009). As a consequence, and as Cary Wolfe has demonstrated, many of the frameworks driving much of the work in animal studies employ—and reinforce—violent logics of biopower in spite of themselves, recasting some lives as sacred while others are rendered killable all over again (Wolfe 2013).

More-than-human geographies that look beyond animals and their bodies have attempted to short-circuit some of these conceptual difficulties (even as they often overlook them--and animal life--generally). Actor Network Theory, Non-Representational Theory, Object Oriented Ontologies and an attendant collection of Deleuzian and Foucauldian-inspired terms—*assemblage*, *dispositif*, *milieu*, *emergence*, *event*, *flat ontologies*, and *sites*—have all risen to combat essentialisms and preconceived categories of analysis and action (Latour, 1999; DeLanda 2006; Thrift, 2007; Harman 2011). Though in no way unified in methods or argument, these literatures collectively demand greater consideration of traditionally marginalized actors of all kinds. Alongside animal studies, these literatures attempt to destabilize anthropocentric narratives in ways that challenge the ‘we’ of collective politics (see Latour 2004 and 2005 in particular). From within this literature, ‘encounters’ have recently joined the lexicon of social and spatial theory. DEFINE ENCOUNTER BETTER HERE. Spaces of encounter change geographical methodology by emphasizing the coming together of bodies, things, and events rather than places or the distribution of things across space (Ahmed, 2000; Whatmore, 2002; Dewsbury, et al., 2002; Hinchliffe, et al, 2005; Whatmore 2005; Haraway, 2008; Bennett, 2010; Simonsen, 2010; Braun and Whatmore, 2011; Askins and Pain, 2011; Leitner 2012; Shaw and Meehan, 2013). Perhaps more importantly, by bringing to light the plurality of elements that shape events and constitute difference ‘encounters’ have considerable implications for considering others, politically and ethically, in an increasingly global social milieu.

In what follows, I reflect on ethnographic field notes that describe the event of an experiment on lobster life in a neuroscience laboratory. I explore how privileging the encounter rather than the animal transforms how we “relate, write, sense, and make intelligible” that which is beyond the human. While an animal-centered approach figures the lobster as a victim in what appears to be a violent experimental practice, I find it does so in ways that reify conventional hierarchies of life and attendant anthropocentrism. A refocus on the encounter overturns these hierarchies and redistributes action in the experimental setting, drawing attention to practices, productions, and affects. Yet, I find a tendency within the conceptual

language of the encounter to occlude connections with broader categories of social analysis, particularly those that link animal and human life on a wider terrain of violence in the production of knowledge. I argue that the encounter ought to prompt interrogation of elements that Yusoff has considered beyond the immediately sensible: conditions of life, suffering, and care must be thought beyond the bodies of human and nonhuman life and beyond the walls of the laboratory.

While I show how these question of more-than-human ethics are intensely geographical, I also find that they are also temporal, requiring that we think beyond the immediacy of presence in the more-than-human encounter. I turn to the work of Boaventura de Sousa Santos and Astrid Schrader to consider how geographies of encounter might better account for temporality and absence in productions of knowledge and life. I find that co-productions of lobsters and humans enter into wider histories in surprising ways, drawing me toward very familiar hierarchies that link political economy of the laboratory to the U.S. military and changing geopolitical strategies. Opening up the scope of the encounter to include these elements quickly challenges easy identifications of what—and who—matter, raising questions of the temporal and spatial scope of geographical research and reminding us that Lucretius's seemingly un-imperiled observer is not, in fact, at all removed from the field of engagement.

## **2. A Human-Lobster Encounter**

One afternoon in the fall of 2009, I perched on a stool in a neuroethology laboratory at a notable institution of higher education in the US. I was there conducting an ethnography on emerging intersections between biological research and technological engineering, investigating how scientists and engineers track back and forth between animal bodies and the robotic counterparts that modeled them. On this particular day, I watched as an advanced graduate student researcher performed an experiment on a single living lobster. From within a laboratory space crowded with tools, technological artifacts, and chemical solutions, I captured pieces of the experiment in the following excerpt from my field notes and an accompanying series of photographs, one of which is displayed here (Fig. 1):

Using a complicated web of rubber bands, Rick has straps the lobster down on a wooden experimental device that looks like it was constructed several decades ago.<sup>2</sup> With a small drill, he bores a hole above the lobster's mouth. As its mandibles continue to open and close, he works carefully with a pin cutter to clip away small pieces of the its shell, further opening space for the procedure. Between snips, he takes up a pipette to clear away hemolymph [fluid that serves as a crustacean's 'blood'] now pooling under the shell. Then with tweezers, he pulls out small bits of tissue, revealing a clear pathway to the bundle of nerve fibers that are the object of his research. He slides an electrode into the lobster's esophageal connector and looks back and forth from the lobster to an oscilloscope that reads the electrical output generated from the lobster's nerves. Through it all, the lobster barely moves; there is no twitching or jerking to indicate disturbance of any kind.

After this seemingly smooth beginning, the experiment disintegrates rapidly. Electrodes refuse to stay in place, a camera recorder meant to document the event is missing, and the software necessary to analyze the recordings is momentarily inoperable. As Rick races from room to room, searching for the needed but missing elements his work, the lobster waits. I watch, trying to remain out of the way. Eventually, anxiously, I ask how long the animal can survive out of water. Clearly preoccupied with other concerns, Rick matter of factly replies that fluid loss will precipitate death in three to four hours.

The experiment continues for only thirty minutes longer at most. Another series of attempts result in more unsuccessful recordings of the lobster's neuro-electric outputs. Rick declares the experiment a failure. As he returns his subject to its tank, I ask about its chance of survival. Rick shrugs, speculating that its open wounds might attract the attention of its tank mates, leading to acts of cannibalism. With no one to regularly monitor the animals, it is unlikely that either of us will know for sure.



**Fig. 1. Under interrogation? The lobster on the experimental apparatus.**

My photographic records of the event are more disturbing than the experience in my memory. In the flesh, the experiment seemed routine, even mundane. Although I clearly felt anxiety about the lobster itself, I also remember experiencing as much empathy for Rick as he frantically searched for working materials. But, the images tell a different story. Strapped to a board with rubber bands, lights shining on its face, the lobster in the images demands ethical reflection. It seems to uncover a grotesque, almost medieval set of practices, suggesting that the experiment is best read not as an event of knowledge production but a scene of violence.<sup>3</sup> The role of violence in knowledge production has been well documented, beginning at least with Foucault (1995). But the lingering question that remains is: Where? Upon which bodies do we locate the enactment of violence? Foucault famously argued that the rise of biopolitics distributed both power and violence across space, away from the body and actions of the sovereign (and her executioner) and across the social body. That theorization of power has only requires continual interrogation into its

uneven distribution—into the precise spatial practices constituted in and through events (see, for example, Braun 2007; Hinchliffe *et al.*, 2012).

The images that resulted from my observations help to produce a critique that locates the terrain of violence—where lives are imperiled—within the bodies of the lobster itself. Following the direction of my own photographic lens, the question of ethics in the laboratory encounter becomes a matter of *animal* ethics. What matters in the encounter seems to be (1) whether this particular animal deserves moral and ethical consideration, and (2) whether this particular interaction with that animal crosses a line of civility. This aligns with much of the work in animal studies, which attempts to move beyond anthropocentric histories and social narratives by putting animal life in the spotlight (see, for example, Wolch and Emel, 1998; Philo and Wibert, 2000; Whatmore, 2002; Mitchell, 2005; Agamben, 2006; Oliver, 2008; Haraway, 2008; Shukin, 2010).

### **3. Animals, Humans, and Ethics.**

The centralization of animal life in the laboratory and elsewhere often leads ethical debates to gravitate toward Jeremy Bentham's and later Peter Singer's thorny question of whether an animal suffers (Bentham, 1823; Singer, 1995). This is a question that matters a great deal in the context of scientific experiments on crustaceans, as the demonstration of suffering bears directly on how lobster bodies are governed in the laboratory and elsewhere. Based on earlier neurological research that suggests that lobsters cannot experience this thing we know as suffering, agencies that regulate animal treatment in the laboratory exempt lobsters and other crustaceans from the policable sphere of care.<sup>4</sup> This lack of regulation creates the conditions for a wide range of neuro- and biological methodologies, including the opportunity to conduct experiments like the one described on an unaenesthetized animal with a fully functioning nervous system. These are methodologies that would be unacceptable today if the subjects were vertebrates.<sup>5</sup> Lobsters and other crustaceans therefore matter for neurological research in part because their bodies do not



unequivocally demonstrate a relationship to pain that sufficiently approximates our own. That is, they enhance the production of knowledge because they can be made to *not* matter according to predominant ethical frameworks.

Fueled by recent research that demonstrates the ability of crabs to remember and respond to hostile environmental elements, many scientists are now attempting to change experimental regulations and call for more humane laboratory and consumer practices (Elwood and Appel, 2009; Magee and Elwood, 2013). But while attempts to include crustaceans within established frameworks of ethics and care may call an end to the kinds of experiments described above—an outcome that may mean something (though it is unclear what) to individual lobsters—they do little to overturn the system of hierarchization and anthropocentric norms that guide scientific research on animals in the first place. Demonstrating the experience of pain in these instances only re-codifies lobsters' role as experimental research subjects whose bodies can be used and discarded in order to advance our understanding of neurological functions and disorders in humans. As Cora Diamond has described, such attempts to expand the moral universe to include nonhuman animals does little to dismantle a “system of entitlement” in which *human* entitlement is most often reasserted (Diamond, 2001: 121).

While the growing animal studies literature has attempted to move beyond the stark and often limited question of suffering, sites of ethical and political significance are similarly relegated to the spaces ‘of and between’ human and animal bodies. By reframing the conditions of ethical consideration around measures of reciprocity, response, or other emotional tissue, this growing literature draws the lines of difference and species hierarchies in new ways. Consider, for example, Alphonso Lingus's work encouraging moral consideration for animals on the basis of “face to face” encounters. Drawing on Levinas, he writes, “the lips crave contact with the lips of the dolphin, the nose brushes the whiskered nose of the Siamese cat...” (Lingus 2000: 49). In a similar reconfiguration, Ron Broglio's work on animals and abandonment looks to voice as the binding element between human and nonhuman animals. In contrast to

speech or language, Broglio suggests that it is animal voices provide grounding for a more-than-human take on Jean Luc Nancy's re-inscription of Heidegger's *mitsein*—being *with* others in the world—as the defining characteristic of *dasein*. And, finally, in Hank Davis and Diane Balfour's edited volume on animals and affect in the laboratory, *The Inevitable Bond*, they show how nonhuman life comes to matter to researchers through different forms of emotional bonding and reciprocal experience. In each of the book's twenty-four case studies, a positive relationship between human and animal life is attained through physical connections, looks, and intimate interactions. A chapter on cephalopods, the only invertebrates featured in the volume, describes how octopuses spit on researchers, thwart experiments, or engage in theft, deceit and other disruptive actions (Davis and Balfour, 1992). While each of these reconfigurations of ethical relations highlights the active role that nonhumans play in our development of social life, they all maintain a focus on the animal body, its capacities, or the immediate site of interaction with human bodies. Within those sites, animals must express a capacity to connect with humans or actively fulfill requirements for participation in the extended moral community. Ethics, here, emerge between living, breathing bodies that come to matter by marking out similarities with difference. Even when radical dissimilarities between human and nonhuman animals provoke the reconstitution of relations, they do so only in so far as an animal's capacity to connect *with* humans can be rendered apparent.

In relation to each of these framings, lobsters remain anomalous, falling short of the required traits necessary to provoke transformation: beyond bilateral symmetry, the lobster's 'face' carries few traits analogous to that of the human; the noises that lobsters make underwater hardly qualify as a voice, particularly given that the frequency is too low for our ears to hear without amplification (Patek and Baio, 2007); and, as restaurant goers and others are often quick to note, they are not particularly engaging. Moreover, despite stories that they mate for life, laboratory and *in situ* observations reveal that they are far from loving to one another. In confinement, their claws are not banded in captivity to protect humans, but rather to prevent attempts to fight with and cannibalize their tank mates. And lest one imagine that such

behavior is limited to the extreme and ‘unnatural’ conditions of confinement, lobster on lobster cruelty in the wild is also well documented.<sup>6</sup>

Rather than figuring lobster and other nonhuman animal bodies as the key site upon which to transform ethical relations and dismember the ‘conceit of anthropocentrism’, we might instead reconsider how and where we compose ethical relations altogether. Literature within the field of animal studies and human-animal geographies has already begun such a process. Donna Haraway, for example, encourages thinkers of human-animal relations to dwell in the aporetic moments characteristic of the “contact zone.” In *When Species Meet*, Haraway suggests that human-animal encounters are provocations to curiosity that lead us toward a sense of “response-ability.” Her notion of responsibility describes a capacity to respond with a sensitivity toward the world and toward the conditions of its (and our) making. Such a capacity, for Haraway, cannot emerge out of a calculable formulae that separate the living things into the categories of those *who* suffer and those *that* do not: “The problem is not figuring out to whom [the command ‘Thou shalt not kill’] applies so that ‘other’ killing can go on as usual and reach unprecedented historical proportions” but rather to learn how to maintain a capacity to respond in the context of an asymmetrical world in which living necessitates “someone, not just something, else dying differentially” (Haraway, 2008: 80). Similarly, Derrida’s tracing of the historical and linguistic contours of human-animal hierarchies in *The Animal that I Therefore Am* serves to deconstruct the foundational tenets of traditional ethical frameworks. Rather than seeking to elevate the lives of lobsters, Derrida’s work rather secures the demotion of the human and the destabilization of the human subject who is a “master of itself” (Wolfe, 2008; Derrida 2008). His is an ethics transformed: rather than prescribing a stable framework for deciding on the moral standing of humans and nonhuman others, Derrida’s rearrangement of interspecies relations necessitated what he called a “law of iterability” in which we would newly confront each particular event or instance of discomfort, injustice, or shared suffering. Such a perspective might invite us to focus on the sight of engagement—the event of lobster experimentation itself—as the space in which ethical relations are reconfigured.

While Haraway and Derrida focused largely on the figures and bodies of animals in these spaces, their work has fed into the emerging geographic literature on more-than-human relations that go beyond the animal. This work, which also draws from Gilles Deleuze and Bruno Latour, attempts to eliminate a consideration of binaries—human/animal, nature/society, man/woman, etc.—by broadening the scope of society and politics outward to beyond what Sarah Whatmore has called the “warm-blooded vulnerabilities of animality” (Whatmore, 2005: 845). Such an approach considers animals not as a predetermined or consistent category—one that exhibits consistent traits or capacities—but as part of a “more heterogeneous company of the ‘non-human’”, the product of contemporary encounters rather than evolutionary or social histories. This view of the encounter, I want to suggest, invites us to re-evaluate human-lobster relations in the laboratory, challenging the questions of “to whom” and “to what” we respond when cultivating a sense of Haraway’s response-ability.

#### **4. The Promise of Encounters: Reconfiguring the Spaces of Ethics and Politics**

The ethical and political implications of thinking with encounters are well established, even as they are far-reaching: encounters are said to upset hierarchies, promote more harmonious ethnic, racial, and environmental relations, redistribute power, and reconfigure the way that we see ourselves in relation to others (human and non), to the environment, to the world. As Helga Leitner recently put it in the context of racial and ethnic tensions, encounters serve to destabilize prejudice, by holding “open the possibility of not only inscribing but also disorienting us from the habits, stereotypes, and prejudices toward the Other, creating the possibility for change and transformation” (Leitner, 2012: 830).<sup>7</sup>

A substantial portion of the literature on spaces of encounter focuses solely on human encounters in spaces of ethnic, racial, and class difference, but geographies of ‘more-than-human’ encounters have also expanded precipitously. At once an ontological project and an etho-political one, emphasizing the encounter attempts to account for the resistant and transformative practices of life, even non-living beings,

that exert an active force. Within these analytical frames, animal and human bodies recede as viable categories of analysis. Along with them, anthropogenic modes of production, ideologies, systems of governance, and regulative legal structures fade into the background to highlight what Jamie Lorimer refers to as “moments of haecceity”, in which one becomes aware of and responds to the unique (and often unexpected) properties of others (Lorimer, 2007). Accordingly, material activities and practices take center stage as actions rather than entities guide analysis. As Derek McCormack suggests (following trends in social theory that extend through Deleuze and Badiou) this “shifts the burden of the ethical away from the effort to do justice to individual subjects, and towards a commitment to develop a *fidelity to the event*” (McCormack, 2003: 502, emphasis in original). Here, old paradigms of agents vs. structures and subjects vs. ideologies erode, training our vision on micro-scale processes, relations, the movement of molecules, technological objects, viruses, forces, and affects that circulate and connect in ‘events’ and ‘sites’ (Braun 2008; Haraway, 2008; Woodward, et al., 2010; Woodward, 2011; Bennett 2011; Hinchliffe, et al. 2012). In much of the literature, animal studies have consequently given way to “thing” studies. Here, human and nonhuman animals now stand alongside nonhuman entities, as each come to matter only in relation to one another. Accordingly, it is not living breathing bodies that demand moral consideration. Instead, ‘life’ is found in the various comings together of living and nonliving things. These, the argument goes, ought to be the objects of our consideration. After a brief discussion of these potentials and their implications for thinking with nonhuman others, I will return to consider not the lobster itself, but the encounter within the laboratory as a site of transformation.

Jane Bennett’s work has been instrumental in shaping this emerging literature on lively encounters. She has drawn attention to the vitality of the inanimate to suggest that ethical relations ought not be decided by attributing moral worth to things, but through a close analysis of productive encounters and the effects of their relations. With a focus on the “confederations of things”, Bennett decenters the active elements in any event. Accordingly, “life” becomes compositions of foreign parts, living and nonliving. A book, a blackout,

a body are not the products of creative purpose, human error, or the willpower to exercise and diet. Instead, Bennett writes of each as the products of encounters of living and nonliving elements that accelerate or slow the composition of words, catalyze the breakdown in an electrical grid, or promote the making of healthy and unhealthy ecologies. These confederacies—made up of living and nonliving bodies as well as technological and ‘natural’ ecologies—become political subjects. They, rather than the individuals or categorical beings that are formed within them, are the actors to which we ought to attribute action and which demand our attention.

In place of ethical frameworks in which species divides and hierarchies of life act as “guidetrails[s] for thought and practice” (Calarco, 2012: 54), such encounters provide a radically different lexicon through which to witness and enact social change. As Bennett re-imagines historical events through encounters rather than through hierarchies of organisms and objects, she sketches a vision of ethics disassociated from efforts to attain moral purity or rigid systems based on rule making. Rather than greater moral certitude, considering encounters often forces us instead to reside in and with what Haraway refers to as a “trackless territory”, where there are no systems of calculation or pre-designed scaffolds of value to guide us in how to live and work with others (Haraway, 2008).

Haraway and Bennett both posit the “contact zone” and the encounter as an opening in thought, a frame through which to arrive at an analysis rather than a pre-existing formula. The uncertainty of standing within “trackless territory” fosters a capacity to respond, to be affected, to develop a sensitivity toward the world and the conditions that constitute it. Bennett insists that such an absence of a restricted framework for thought will “enable us to consult nonhumans more closely, or to listen and respond more carefully to their outbreaks, objections, testimonies, and propositions” (108). Indebted in part to the resurgent interest in the writings of Spinoza, such an ethics of the encounter finds its grounding in the capacity to affect and be affected by others, to create joyful encounters, and to expand (or stifle) joyful passions (see Popke, 2009; Bennett, 2010; Thrift, 2011). For Bennett, this perspective serves to both identify and promote “healthy

and enabling instrumentalizations, rather than treating people [or animals, or environments] as ends-in-themselves” (12).

In assessing our lives as they are lived with nonhumans, others have similarly lauded the absence of restrictive ethical and political frameworks, drawing attention to more-than-human encounters as a means of generating alternative ways of being and engaging the world. For philosopher Matt Calarco (2012), overturning traditional ethical and political frameworks creates space for “political, ethical, and ontological innovation” (55). Nigel Thrift calls for the cultivation of a generous spirit and an ethos which “adds to the world by framing an energetics of encounter in creative and caring ways which add to the potential for what may become” (Thrift, 2004: 127). The encounter can be considered to promise new ways of engaging with the world, rearranging priorities and redistributing responsibilities for life on earth. In short, the encounter seems to offer up a pathway toward a wholesale transformation in our material and social milieu.

## **5. The More-Than-Lobster Encounter**

With the lens focused on a confederacy of things rather than lobster bodies or the human intentions that regard them, my reading and analysis of the experiment shifts. It no longer appears as a destructive practice that breaks down lobster bodies. At least, it is not that alone. Instead of human and lobster, I find a cacophony of interacting and interrelated parts, none of which act as anticipated in the event of the experiment.

Revisiting my field notes and photographs, I have to read between what I have written down about Rick and the lobster and look toward the edges of the images. There, I find a community of human affects and movements, lobster bodies, machinery, electrodes, chemical solutions, architecture and mathematical equations make and remake one another as a scientific community. Rick alone was not the primary actor here. He was “not so much a doer (an agent) behind” the experiment as he was effected by a more-than-human assemblage that extends well beyond his animal subjects (Bennett, 2008: 28). The forty-year-old

oscilloscope to which the electrodes and, by extension, the lobster were connected was a participant. It played a role in the failure to generate a signal distinguishable from noise. The video recorder—left in another laboratory or building—referenced a lack of organization and communication among researchers. The software that failed operate, itself the product of several years of code writing and tweaking, appeared at this moment in an iteration that rendered it inoperable. The laboratory itself—housed within an old building once part of a military barracks—lacked the infrastructural sophistication often found in better-endowed research institutions. The unfolding of scientific practice seemed largely grounded in contingencies as the objects meant to connect Rick’s working knowledge of neuroscience to the workings of the lobster nervous system failed either to operate or to appear.

With this lens, the ethical implications of the experiment can no longer be made to center on whether the lobster ought to be subject to scientific interrogation. The ground shifts. The animal becomes a single element, a node in a messy assembly of objects and organisms. Framed by the encounter, suffering and joy—along with value, ethics and politics—are made attributable to the collision of biological, technological and affective elements that we find in the laboratory. As the event unfolded, the elements of the encounter and their presumed hierarchies clearly shifted. Attentions and priorities were redistributed. No one person or thing to could be blamed. The combination of technologies and things thwarted Rick’s capacities as a productive agent, generating frustration rather than fortitude. As part of this “confederacy” of things, Rick reconstituted himself amid the tools, technological apparatuses, and bodies of other organisms, simultaneously reaffirming—or, perhaps, questioning—his identity as an inquiring mind as he performed this a ritual of knowledge production in the laboratory. Rick did not fail to make the lobster’s nervous system transparent; nor was he simply a flawed executioner of scientific inquiry, incapable of attaining mastery over the lobster’s body. Instead, the encounter itself produced upheaval, its elements coming together in discord. The situation provoked a new awareness of the fragility of both technological and biological assemblages: Rick and the lobster were both exposed, vulnerable.



Upon such a re-reading, it appears that within this ‘confederacy of things,’ there is a potential to disrupt narratives of anthropogenesis, to erode conceptions of human mastery in the practice of scientific research. In the moment, I bore witness to a cacophony of events, dramatic upheavals, hierarchies overturned, vulnerabilities laid bare. But if traditional narratives of human-nonhuman relations in knowledge production were upset in the encounter, those outcomes were not lasting. In the aftermath, usual tropes of anthropogenesis dominated the narrative of the experiment. Others in the laboratory drew on the event as evidence of Rick’s questionable status as a researcher, locating the agentic powers responsible for experimental failure in him alone. And while failure in experimental practice is often celebrated as a central part of scientific inquiry, it seemed a certainty that this event would produce paralysis rather than the impetus for progress as the experience seemed to introduce doubt into Rick’s confidence in his role as a budding researcher. In the subsequent months I spent with the lab, his drive to perform experiments clearly waned and his teaching duties took precedence. If there was an *elan vital* to this specific coming together of things, anxiety rather than ambition characterized it.

If geographical research is to endow spaces of encounter with the potency to generate new ways of viewing ethical and political relations, this encounter suggests that our scope must expand beyond the present moment reflected here. A handful of other geographers have briefly taken issue with the limits of the narrow analytic lens characterized by the encounter as it plays out in most often in the immediate present. Gil Valentine (2008), for example, has argued that the literature on urban encounters often expresses a “worrying romanticization” (328). Even encounters that open up the possibility for undermining racial hierarchies, she suggests, still leave us considering questions of how to scale up effects to produce lasting or wide-spread transformation. Jeff Popke (2009) too has wondered over the scope of materialist geographies and spaces of encounter, arguing that narrowing the parameters of geographic research risks affirming a politics and ethics of individual enlightenment. Anxiety over tendencies toward individualism also plague Jane Bennett in her own formulations of material vibrancies and encounters. Her

attention to “things,” she worries, “lends itself to an atomistic rather than a congregational understanding of agency” (2010: 20).

What Popke and Valentine indicate and Bennett worries over are the geographical dimensions of the encounter: where and how one might locate its spatial limits to decide who and what are included within it. Here, we might begin widening the lens from lobster to encounter and onto the laboratory. This may lead to questions around, for example, whether this laboratory evinces a “culture of care” (NERC, 2013). I might ask why “care” was evident in other corners of the laboratory, but notably absent in this vent and its aftermath. But while considering care at this scale may well generate lasting transformations around human and animal labor as well as species enrichment, it may be important to go further still (Davies, 2012). We may also need to consider, as Popke does, the “stage” on which encounters take place, one “whose architecture is, at least to some extent, shaped by a set of powerful global narratives that still have much to say about the nature of our events, encounters and collectives” (Popke, 2009:6).

Such concerns threaten to resurrect well-worn battle lines within the social sciences over the relative weight of political-economic structure versus the agency of humans, nonhumans, or a “confederation” of both. They suggest a return to an analysis rooted in traditional hierarchies of scale, perhaps encouraging a multi-scaled analysis that moves from the laboratory up to the political economy. This threatens to thwart the promise of thinking with encounters and risks reifying the hierarchies that theories of the encounter seek to dislodge. A return to early versions of Actor Network Theory may confront some of these difficulties by following connections outside of the laboratory on a ‘flattened’ landscape of agential actors. What each of these options threatens to miss is the recognition of situated contingencies within what Wolfe refers to as the “disjunctive and uneven quality of our own political moment, constituted as it is by new forces and new actors not very legible by the political vocabulary of sovereignty we have inherited” (2013, 104). To get at that, it may be necessary to go beyond the obviously geographical questions around where and with which bodies the limits of any encounter lie. Just as essential

may be the question of ‘when?’. In what follows, I turn to the work of sociologist Boaventura de Sousa Santos and STS scholar Astrid Schrader to develop an alternative—one that does not abandon the promises of thinking with more-than-human encounters, but enables a way of contending with the heterogenous temporalities that work outside the present moment to enfold multiple historicities, imagined futures and political economies within the encounter itself.

## **6. Expanding the Present, Expanding the Encounter**

To begin, some background on Santos’s work will be helpful. In his essay “A Critique of Lazy Reason” (2004), Santos suggests that one of the most fundamental characteristics of prevailing thought in the West is the persistent valorization of linear temporality. By privileging notions of progress, he argues, the richness of the present is condensed as a “fleeting instant” and the future is expanded as an “infinite” repository of technological acceleration (Santos, 2004: 24). This notion of progress erases the heterogeneous forms and expressions of life figured in the present reducing their status in sociological and historical accounts to “residuum” (21). Aspiring to free everyday social practices from this status and provide them with “their own temporality and thus the possibility of autonomous development,” Santos develops a “sociology of absences” (21).

Like the encounter, Santos’s “sociology of absences” Santos’s “sociology of absences” highlights the rich potentials of the present to erupt in ways that run contrary to prevailing norms. We have seen how considering encounters rather than organisms might expand the scope of what is intelligible in an event. Not only does it make nonhuman others matter, it also reveals the particular dimensions of how they matter—how Rick’s experiment, for example, disrupted narratives of anthropogenesis in experimental process. But, if elevating the everyday conditions of the present is necessary for the development of alternative ethical and social relations, they are also insufficient. Santos warns that celebrating discretely bounded moments leaves open the space for the retroactive reification of narratives that conform to linear conceptions of time. Western science, quantification, technological development, and anthropogenesis are

too easily reaffirmed as the criteria for truth and value. As I witnessed in the laboratory, disruptions to prevailing narratives were easily erased. As a consequence, valorizing the “inexhaustible richness of the world and the present” (12) becomes difficult as that richness is all too easily recuperated into a more conventional frame. By elevating the power of the encounter—itsself most often figured as a “fleeting instant” that opens into an infinite future—its potentials are nullified by conforming to a “monoculture of linear time” (Ibid.).

While geographies of encounter expands the scope of what is intelligible in any event--making nonhuman others *matter* in new ways in the process--they also often fail to fully articulate how material pasts and future visions circulate within the event itself. This, I argue, leaves open the space for narratives that conform to linear conceptions of time—western science, quantification, technological development, and anthropogenesis—to become the primary criteria for truth and value. As I witnessed in the laboratory, the encounter disrupted dominant narratives of progress, but those disruptions were easily erased, making it impossible to valorize much of the “inexhaustible richness of the world and the present”(12). This has consequences for imagining how networks of value production converge within those moments—and after them.

Rather than merely celebrating the richness of encounters then, Santos argues that attention to everyday social practices must be paired with a “sociology of emergences.” This would involve a “cartographic imagination” capable of illuminating how events take shape across differential times and spaces simultaneously.<sup>8</sup> For Santos, bringing these multiple temporalities to light is rooted in the recognition that reality “cannot be reduced to what exists” (23). The present—or, the encounter—is much more than the elements found within it. Expanding the spatial and temporal dimensions of the encounter in this way promises to provide new purchase for the political and ethical implications of the lobster experiment beyond a strict focus on either the animal or the laboratory. In what follows, I expand my analysis to account for the historically situatedness of the lobster encounter and the disjunctive temporal relations that

take place alongside and within it. What I find is that there is much more stake in the laboratory than the lobster bodies or the micro-melodramas of everyday life.

## **6. Simultaneously Beyond and Within the Encounter: Militarizing Life**

I begin with a brief history of the laboratory itself. In the 1970s and 1980s, laboratory Primary Investigator, Maurice Evans, worked to model the relationship between the lobster's biomechanical movements and its neurological structure using methods similar to those described in experimental event I have written about here. His work mapped the relationship between observed behaviors and the patterns of movement generation in the nervous system. The work shed light on the general relationship between nervous systems and movement across the animal kingdom. But Evans' research did not have what we would today consider direct "social impact."

The National Institutes of Health and the National Science Foundation are the largest funding bodies in the US for bioscience research. They typically award funding to academic laboratories and private institutions on the condition that the research directly links to human health or immediate social need. Corporate partnerships, which are a growing resource for research funding in university laboratories, similarly require direct outcomes. The social implications of exploratory research into animal bodies—particularly those that are not analogous to our own—are not obvious, however. This has meant that funding for basic biological research on nonhuman animals that do serve a metonymic function in human health research—animals like lobsters—is not easy to come by. In the 1990s, as the DoD struggled to develop strategies and tactics capable of anticipating post-Cold War 'respatializations' of war, they turned to biological life as a means of "enhancing capacities" (Gregory, 2010; Joenniemi, 2008). Being able to understand—and hopefully reproduce—qualities like smallness of stature, flight, certain material structures like spider silk, or the ability to navigate surf zone environments produced new systems of valorization for basic research on insects, bats, spiders, lobsters, and other animals.

As part of these boarder trends, the Office of Naval Research and the Defense Advanced Research Projects Agency (DARPA) sought mechanical devices that could disarm underwater mines without endangering the lives of soldiers. In response—and with new resources for grant support—Evans began work on robotic lobster models that functioned using the principles of neuroethology. His resulting research program forged new connections between human engineers and animal bodies, helping to spark the emerging field of biomimesis.

In contrast to research funded by corporate interests, this relationship between the laboratory and defense strategy has played a role in opening up our apprehension of lobsters and other animals beyond capital, exchange, and equivalency via experiments like the one described. Here, the DoD endows the active potential of nonhuman life and the constitution of more-than-human assemblages with value beyond measure; in lauding the capacities of lobsters and spiders, its strategic plans already overturn conventional hierarchies of life—at least in the moment. Lobsters and other forms of biological life matter to the U.S. military for their ability to perform what humans cannot, to dominate an environment in which our bodies have difficulty functioning. Just as the Weizman (2006) has described the Israeli Defense Force as having taken up Deleuzian concepts like “smooth space” and “nomadic war machines,” the DoD seems to have taken up a call to “become animal” by engaging in a bio-inspired turn toward technological innovation (see also Johnson 2010). At the same time, these funding streams tie the lives of nonhuman animals and their study to the uneven distribution of life and death on a much wider plane, one constituted amid a post-Cold War geopolitical landscape characterized by “asymmetrical” relations. In this context, the DoD’s aversion to casualties play out through the development of these bio-inspired technological apparatuses. Like drones, the DoD’s growing menagerie of robots—which now includes dogs, fish, and hummingbirds among many others—can execute both commands and enemies of the state while limiting risk to American soldiers. The more-than-human encounters these innovations produce do little to shake such hierarchies of life. Within this context, the lobsters and the laboratory take on very different roles. Lobster—and Rick’s work—

matter through their enrollment in the largest, most potent military apparatus in the world. By merely ‘attending’ to the more-than-human encounter or the culture of the laboratory, we would miss the connections to this fractured landscape of power and privilege that crosses human and nonhuman bodies alike.

This takes our experimental encounter to an all-too familiar geo- and biopolitical frame. It reveals the re-militarization of university science and the redistribution of warfare across not only the social, but also the biological milieu as “life itself” and more-than-human collaboratives become sites of strategic engagement (Foucault, 1990; Dillon and Reid, 2009). Connections between the experimental encounter and military strategy in the 1990s and early 2000s alter how, where, and through what bodies we consider violence, ethics, and politics. The lobster re-enters here as a figure that makes legible the politics of national defense. The history of lobster research reveals a disparate and rapidly changing military force, one that coheres only loosely around a biopolitical logic of life and death as it is enacted through more-than-human bodies in real time. If Santos’ work has led us to consider the links between geo- and biopolitical hegemonies and experimental practices, it has so far only served to put us on well-covered territory. We find that, unlike Lucretius’s observer, parts of us and parts of our more-than-human compatriots are often imperiled on a terrain of warfare, even when we consider ourselves to be spatially and temporally at a distance. Here, however, the task is not merely to “scale up” from the encounter but to recognize the topological interweavings that place life—human and nonhuman, in the laboratory and on the battlefield—in peril. Even more than this, however, Santos’ writings also encourage us to look for the imperative of progress at work here that lends legitimacy to these events. The drive to produce innovations in military technologies is central to the projects of DARPA and the ONR, most obviously notable in DARPA’s motto to “accelerate the future into being.” Such a remit empties the present of significance, “condensing” it to expand the future as an “infinite” repository of technological acceleration (Santos, 2004: 24). This demand for progress renders material confederacies of knowledge production important only in so far as they

operate as agents to quicken the future. The body of the lobster—indeed, life itself—ceases to matter in light of their potential to be replaced by a technologically, rather than biologically, endowed future. It is here, in the emptying out of the present, that the political salience of the encounter begins to come back into relief. By enlivening the present and considering its conditions of “emergence,” Santos works to replace the emptiness of the “future according to linear time” with one of plural, but concrete possibilities. Through these, we can begin to build a future that is not an abstract projection or a teleological eventuality, but an “object of care” (Santos 2004: 27).

Astrid Schrader’s work on care and temporality helps to bring the implications of Santos’s thought to bear on the lobster and the question of animals with which I began. Rather than care for particular species or individual animals, Schrader argues that what is at stake in human-animal studies is an educational endeavor: we must learn “to become affected” in ways that dissociate “affection not only from the humanist subject, but also from movements in time, from direct (helping) action and the assumption that advocacy necessarily means speaking for an (usually assumed to be inferior) other” (Schrader, forthcoming: np). Drawing our attention away from animal bodies and encounters with them, Schrader argues that caring about nonhuman lives “requires a re-conceptualization of time.” She suggests that a reading of the “thick present,” such as that of the encounter, should be viewed alongside the situatedness of events as well the disjunctive temporalities that work within them (ibid.). It is this tripartite attention to temporal elements that helps us to replace the question of “what?” in considering the allocation of care with the question “how?”. How do we come to care? To answer that question, Schrader suggests, temporalities and spatialities perhaps therefore matter as much as enfoldings of human and nonhuman life. Thus, we might consider the “object of care” not to be the lobster or even human and nonhuman relations within the laboratory. Rather, “what” is to be cared for is a wider landscape in which encounters in the present are not only a means toward progress, but constitutive acts of future-making. Echoing Wakefield’s recent arguments around the politics of more-than-human assemblages, we therefore might argue: if we are to care for a more-



than human future, how encounters come together matters as much as the lively and material elements that congeal within them (Wakefield, 2014). Only then might we begin to weave productions of knowledge with a political landscape built of care-ful relations rather than our presently hegemonic global system of geopolitical and anthropocentric entitlement that transects human and nonhuman bodies alike.

## **7. Conclusion**

The language of the encounter directs us toward a rearrangement of ethical frameworks and political affiliations, reorienting our perspectives just as we reorient the lobster. But if encounters encourage us to carefully consider the asymmetrical relations and systems of value production in the laboratory rather than organisms, they remain limited in scope and scale. Often fixated on immediate moments, encounters encourage us to lose sight of the multiple temporal and spatial elements that are also part of any event's constitution. If what takes place in the laboratory is an event, it is one that transgresses space and time, expanding (beyond) the present and enfolding other places, disparate pasts and histories of violence within it. As the military increasingly enrolls university research and learning in the theaters of contemporary and imagined future warfare, the question of suffering in my initial encounter with the lobster slips in and out of focus. What emerges is an analysis of how the encounter erupts within and passes through a geopolitical terrain characterized by asymmetries of power, military capability, and suffering across space and across species.

There are considerable risks here as well as opportunities in analyzing multiple temporal and spatial framings at once. Locating suffering outside of bodies, on a topological terrain disjointed in both time and space, the lobster itself fades from view. But, as questions of ethical significance are relocated to this "trackless territory", we also attain the ability to bring into the relief the connective tissues that join social relations, institutions and bodies both human and nonhuman. In this case, refocusing our analysis on and beyond the encounter has highlighted relationships between categories of public policy around higher education, national defense strategy, and the fleshy tissue of lobster lives. Well beyond animal and human

relations, enacting ethical relations of care must engage in how things, bodies, and events come together, perhaps necessitating the disassembly of uneven systems of governance of which we are all a part. Ferreting out such interconnections among thick presents and disjunctive temporalities requires careful analysis—there is no well-programmed methodology to stabilize us in this “trackless territory.” This offers no clear trajectory into the future any more than the fictitious reliance on future characterized by “progress.”

Through mapping links across time and space, however, we might begin to develop a heightened sensitivity not only to how animal lives and bodies matter, but the means to fight for a world beyond the conditions of the present. It is within that space that we may begin to engage both times and bodies “beyond us” (Yusoff, 2013, 209).

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<sup>1</sup> The original text in Latin reads, “Suave etiam belli certamina magna tueri per campos instructa tua sine parte pericli.”

<sup>2</sup> All names of participants and informants have been changed.

<sup>3</sup> It is worth mentioning that training scientists is a large part of the laboratory’s daily operations and accounts for many of the animal experiments taking place. During my time there, undergraduate and junior graduate student researchers were ‘trained up’ by replicating a series of neurological experiments on crayfish that were first performed in the 1800s.

<sup>4</sup> Demonstrations of pain and suffering can be difficult to decode in nonhuman bodies as well as those of fully functioning, communicative humans. Crustaceans present particular difficulties, with evidence both for and against their consideration. Ecological behavioralists suggest that lobsters clearly express fear, displeasure, and interests both in the wild and in the kitchen. Based on observations of lobster migration patterns, for example, ecologists argue that lobsters express very clear preferences for moderate ambient water temperatures, suggesting that they experience at least displeasure, if not suffering, in too cold or too warm waters. Additionally, lobsters are widely known for possessing a highly refined peripheral nervous system capable of transmitting nuanced information about their environment. However, with no central brain, their nervous systems are undeniably simple compared to vertebrates. Neuroscientists distinguish the presence of nociception (the capacity to react to noxious stimuli) with the experience of pain proper (Barr et al., 2008). While the simplest, single cell organisms exhibit nociception, scientists do not consider these organisms capable of generating an emotional response to those stimuli. At issue is whether invertebrates have neuro-receptors capable of processing pain, a complex enough nervous system capable of processing pain, adequate responses to neuro-transmitters like opioids and analgesics, adequate physiological responses to negative stimuli, and adequately advanced capacities for learning and memory. In other words, scientists question whether lobsters and other crustaceans can be said to possess self-awareness. A series of recent experiments have moreover demonstrated the ability of crustaceans to remember and avoid painful interactions (Elwood and Appel, 2009; Magee and Elwood, 2013). For different sides of the argument, see Smith 1991; Broom, 2007; Braithwaite, 2010; and Elwood, 2011. C.M. Sherwin’s article “Can Invertebrates Suffer?” (2001) goes beyond this debate to question the logic of analogy that guides research on animal pain altogether. Many in the food industry have fretted over the most humane way to kill lobsters for cooking. This is particularly true in the UK, where the “Crustastun”—a device that electrically stuns lobsters before dropping them a pot of boiling water—has been heavily marketed to chefs since its debut on the market in 2009.

<sup>5</sup> The US Animal Welfare Act (USDA, 2009 [1966]) and the National Academy’s *Guide for the Care and Use of Laboratory Animals* (Guide, 2011), which regulate animal treatment in the U.S., codify the view that lobsters are

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unfeeling. While *The Guide*, for example, stipulates that proper sedation or anesthesia is required for experiments on animals that cause more than “momentary or slight pain or distress”, the guidelines apply only to vertebrate species (*Guide*, 2011: 200). The Animal Welfare act goes even further, stipulating that its own definition of “animal” excludes mice, rats, and some birds.

<sup>6</sup> Journalist Trevor Corson spent time lobster fishing and following lobster scientists for his book, *The Secret Lives of Lobsters* and has concluded that, regardless of living conditions, lobsters are simply “jerks” (Dreher, 2004). In a 2004 interview, Corson referred to considerations of the lobster as deserving of ethical and moral consideration as both elitist and misguided, as he wondered aloud how one could accord moral standing to creatures that seem to be self-loathing: “Lobsters despise each other. They socialize a lot but in a hateful way” (ibid.). For example, in response to the myth that lobsters “walk hand in hand along the bottom of the ocean,” Corson notes, “they do in fact walk hand in hand along the bottom of the ocean, but that’s a deadly game of chicken called ‘claw lock.’ When other forms of pushing and shoving haven’t settled a fight, the two lobsters reach across like they’re shaking hands and put their two crusher claws together to see who chickens out first” (Dreher, 2004). Although clearly an example of vivid anthropomorphizing, Corson’s lobsters appear relatively indifferent to what we may consider their own ‘suffering’ or that of their conspecifics.

<sup>7</sup> Of course, encountering others has long been known to also have the opposite effect, a tension long central to studies of urbanization.

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