From the human to the planetary
Speculative futures of care

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Abstract

This is largely a theoretical, speculative essay that takes on the question of what 'care' looks like at a moment when climate change is increasingly taking center stage in public and political discussions. Starting with two new practices, namely, humanitarian care for nonhumans and One Health collaborations, I seek to determine what forms of political care can incorporate the well-being of future generations and future iterations of the earth. After an exploration of One Health as an approach to planetary care, I ask what its parts enable us to think, despite its limitations; I focus on the new human-nonhuman assemblages connected through different biosocial models, such as neuroscience or immunology, to see how these scientific theories might enable new possibilities. I argue that a focus on biological ecologies at different scales – as opposed to ethicomoral categories like humanity – can open the way to a larger imaginary of human and nonhuman flourishing and a space for nonmoralistic politics.

Keywords

care, One Health, humanitarianism, Anthropocene, speculative theory

In August 2017, newspapers reported the evacuation of a group of lions, tigers, and bears who had been trapped in harsh conditions in a zoo in the war-torn Syrian city of Aleppo; they were taken to a wildlife reserve in Jordan. The move was organized by an Austrian-based animal charity, with help from Turkey (Saad 2017). And one month later, in September 2017, there were reports about teams of rescue workers in Cuba who airlifted a

group of dolphins to safety from Hurricane Irma (Farrell 2017). This work was aided by new communications technologies and networks that allow the transportation of animals across countries and oceans. Indeed, such relief efforts joined a growing transnational humanitarian industry and set of infrastructures for animal rescue, health, and protection. I first became aware of this burgeoning industry after the 2010 earthquake in Haiti, when I was doing research on humanitarianism more broadly. Humanitarian aid flooded into Haiti, but not just for people. I found that a number of NGOs had come together to form the Animal Relief Coalition for Haiti (ARCH), with the goal of providing medical assistance to animal survivors of the catastrophe.[1] Efforts such as these are now everywhere, from an entire relief plane of cats and dogs rescued from Texas after Hurricane Harvey in 2017 and flown across the United States to be adopted (again sponsored by animal-rescue organizations, along with Southwest Airlines; Korosec 2017) to a cat in Gaza who broke her jaw and, thanks to lobbying by animal-welfare groups, was granted a travel permit to cross into Israel for veterinary surgery (Donlan 2017).

Another example demonstrates a commitment to human and nonhuman health, but on a very different scale: to cope with the rise of zoonotic threats like Ebola, SARS, or Zika (diseases and infections that are naturally transmitted between vertebrate animals and humans), doctors, veterinarians, epidemiologists, and nongovernmental organization (NGO) workers have come together to think about health beyond human bodies and populations. These efforts scale up to the level of natural environments in which human life flourishes, and think of care beyond human medicine, shifting to a model of planetary ecology and to the earth systems that provide not only sustenance but energy and shelter. For instance, in Southeast Asia, Australia, and Africa, new collectives are working together to figure out how bat meat (as bushmeat, or meat from undomesticated or wild animals, hunted by humans for food in tropical forests) can lead to lethal viruses that move from fruit bat reservoirs to humans. They link this disease pattern to deforestation and the health of forests (Mwangi, de Figueiredo, and Criscitiello 2016). Such collaborations are being grouped together under the label 'One Health', or 'One World, One Health',[2] a concept that began with the WildLife Conservation Fund and is now being developed by international multilateral organizations,

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1   In 2011, ARCH claimed that, since its inception, its mobile veterinary clinic had treated nearly sixty eight thousand animals, including dogs, cats, horses, cattle, pigs, goats, and sheep (American Veterinary Medical Association 2011).

2   This in turn builds on the concept of 'one medicine', which was endorsed close to one hundred years ago by figures such as the physician and founder of social medicine, Rudolph Virchow; it also builds on the concept of *syndemic*, which refers to the synergistic connections between afflictions, leading to an excess burden of disease (Rock et al. 2009).

governments, NGOs, private organizations, individuals, and educational institutions.3 The Gates Foundation is now involved, funding One Health projects like vaccines for Rift Valley Fever, which can affect a variety of species, from humans to cattle; the Global Clinton Initiative is also on board, as well as the more animal-rights-oriented American Humane Association. The idea of One Health is that people, animals, plants, and the environment – including things like viruses, microbes, and insects – are so intrinsically linked that in order to manage health and well-being adequately we have to look at the many interfaces between them. Still relatively amorphous, One Health's official goal is to improve the lives of all species – human, animal, and plant – through the integration of human medicine, veterinary medicine, and environmental science (One Health Initiative, n.d.). Ultimately, One Health focuses on health at the individual, population, and ecosystems levels, moving both humanitarianism and health from the scale of populations to the scale of the planet.

Today, at a moment when climate change is increasingly taking center stage in public and political discussions, when we are being urged to care in new ways – to care about the planet, to care about our ecosystems, to care about nonhumans – I begin with these two new practices, namely, humanitarian care for nonhumans and One Health collaborations, to think about what care might look like in the era of what many call 'the Anthropocene', and others, more critically, the 'Capitalocene' (Moore 2017) or 'Chthulucene' (Haraway 2016). Do these forms of care incorporate the well-being of future generations and future iterations of the earth, and, if so, on what terms and through what measures?

These are forms of care that, while concerned with 'the human', do not let it take center stage. But do they go beyond rescue, beyond the kind of humanist, moralist stances often embedded in the forms of care focused on human health, such as humanitarianism? How are notions of care changing? Can they incorporate new political grammars and relationships? The study of care prompts us to ask how affect, biology, and politics come together in both understanding and promoting health and well-being. Do we only care for people in our society, or is care for all of humanity? Should care also go beyond humanity? Whose health matters, how do we conceive of its boundaries – by way of affective ties, political connections, or biological measurements – and how do these criteria get combined?

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3   Among many others, the following promote the One Health concept: the World Bank, World Organization for Animal Health, World Health Organization, Food and Agricultural Organization, US Centers for Disease Control, European Commission, American Veterinary Association, and One Health Center at the University of California's Global Health Institute. More can be seen on the One Health Initiative website: http://www.onehealthinitiative.com.

Part of what motivates this essay is a dissatisfaction with the ways political care4 has been articulated in modernity: it has been imagined at the level of the nation-state and at the level of humanity, but both of these rely on exclusionary political frameworks and are often driven by limited moral sentiments such as sympathy, pity, or compassion. How do new forms of care think with and beyond the human and beyond moralism or well-intentioned moral dispositions?5 While the problematic history of biological determinism and sociobiology might have made us think otherwise, I argue that, in fact, a focus on biological ecologies at different scales – as opposed to ethicomoral categories like humanity – can open the way to a larger imaginary of human and nonhuman flourishing and a space for nonmoralistic politics. That is, by paying new attention to cross-species, multiscalar biological connections rather than the all-too-familiar affective links, we might begin to identify and engage in forms of relationality that are both more expansive and more ethically and politically just.

I join a renewed feminist interest in care, one grounded in the belief that care can be retooled to address persistent forms of exclusion and domination. In this version, care is at once an affective state, a form of practice, and an ethicopolitical obligation. While located in the mundane and everyday, in this triptych form, care may actually have a different sort of revolutionary, transformative potential (Puig de la Bellacasa 2017; Martin, Myers, and Viseu 2015; Tronto 1993; Stevenson 2014). Despite the many reasons to critique care, from its imbrication in neoliberal ventures to well-meaning projects that have unintended and often violent consequences (Ticktin 2011, 2006), increasingly scholars, antiracist activists, and transnational feminists are reclaiming its power, in situated, nonbureaucratic, and politically potent forms. For instance, according to Audre Lorde (1988) and Sara Ahmed (2017), for those who are marginalized, care is a form of political warfare: to engage in care is to uphold the right to survive.6 The STS feminist scholar Maria Puig de la Bellacasa (2017, 2011)

4   When I speak of 'political care', I refer to care in relation to political collectives, of which health care, or public health, is only a subset. That said, the models for health care have largely reflected these forms of political care, from colonial medicine, based on imperial regimes, to international health institutions like the World Health Organization, based on nation states, and finally, to global health, which reflects a larger transnational set of institutions (see Greene et al. 2013). The question now is how to create a more encompassing framework that allows us a focus beyond the present, beyond human lifetimes even, to address the well-being of future generations and future iterations of the earth.

5   By 'moralism', I mean situations in which the moral order becomes a primary order, pretending to be outside power (Brown 1995); as such, it risks repressive measures in the name of care.

6   Similarly, Saidiya Hartmann (2016) argues that the forms of care produced through the violent structures of slavery and now active in racial capitalism are not reducible to either: they enable those who were never meant to survive to do just that.

refuses to see care as a prescribed set of practices and affects, preferring to conceptualize it as a form of political imagination to fuel hope and desire for transformative action.

My goal is to clear a path for new political formations across different species and temporal lines in ways that decenter the human, even as I do not assume an easy or simple equivalence between all lives. To this end, I trace the concept of care, and the collectives it brings into being, to see how it responds to new initiatives to broaden its ambit. This argument is inspired in part by the work of Bruno Latour (2007) and Michel Callon and John Law (1997), who reconceived the idea of 'the social' from the perspective of actor-network theory, as the movement of assembling and reassembling associations and collectives. But I push their account to include a feminist edge, keeping an element of critique alive. I am interested not only in tracing new collectives or assemblages but in trying to broaden the scope of who and what matters, directing attention to 'neglected things' (Puig de la Bellacasa 2017).

More specifically, I am interested in furthering forms of noninnocent care, which acknowledge the ways that care partakes in valuations of life, which may include the killing of certain forms of life, from mosquitoes to bats; as Haraway (2008) states, the binary opposite of humanism is to assume we can live without killing. Rather, for her, the question is how to live responsibly with the necessity and labor of killing, without making beings killable. This approach recognizes interconnected forms of being and being-with, and in this sense, I build on literature that has questioned the distinction between nature and culture (Haraway 2003; Kohn 2013; Latour 1993; Tsing 2015; Youatt 2014). That said, while debates about ontology haunt the questions I raise, here I focus my attention on amplifying and reframing interactions between beings. In trying to disrupt the commitments of humanism, which I do by way of engaging with the practices of contemporary immunology and neuroscience, I take an approach that suggests that disclosing the potential of different forms of care might help create the conditions for the emergence of different ways of being,[7] ways both open to and respectful of the vitality of life. My intervention is to suggest that biological connections offer a particularly promising opening to this future – insofar as we recognize that biologies themselves are always constructed in and by history – and that new affective grammars and infrastructures can be built on and through these biological ecologies.

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[7]   This approach is similar to the critical hermeneutics that Jarrett Zigon (2018, 2019) proposes.

In what follows, I trace the intertwined relationship of care and its collectivities through three particular, overlapping political moments.8 I want to emphasize that this is largely a theoretical, speculative essay. That is, I join a group of scholars, writers, and designers who are imagining – speculating about – new political forms, attentive to the link between potentiality and possibility (Zigon 2019); if we can identify potentialities, we might be able to bring something new into being. My goal here is to use empirical research primarily as a way to help imagine an 'otherwise' (Povinelli 2011) or an 'incipient not-yet' (Zigon 2019). Drawing on my earlier ethnographic research, I begin with humanitarian care, which treats humanity as its subject, in order to show the limitations of this form of care, which stratifies and discriminates. Second, I explore the new challenges and efforts to create a different, planetary vision of care. Here, I draw on interviews with One Health providers and those who work for the American Humane Association, conducted in the United States and in France between 2013 and 2015, as part of a larger project on how humanitarian care has been extended to nonhumans. I also draw on a rich body of secondary research. Third, while I explore One Health as an initiative to protect future health, I draw attention to the ways it has not fulfilled its potential. But rather than having critique as my endpoint, I join a broader move toward speculative thinking about what care might be. And while I am certainly not recreating the concept of care, I am indeed trying to reimagine its horizons; the goal is to forge the way to a form of noninnocent political care that enables the flourishing of life rather than its exploitation and destruction.

Humanitarian care

Until fairly recently, it has been difficult to think of modern notions of institutionalized political care outside notions of 'the social': outside of notions of society, the social order, or human beings as social beings. That is, how to care and for whom to care were shaped by what scholars have called 'the invention of the social' (Donzelot 1984) as a form of politically motivated care in the mid-nineteenth century. Scholars including Michel Foucault (1978), Giovanna Procacci (1989), Jacques Donzelot (1991), and Nikolas Rose (1999) have written about techniques of the social, from forms of measurement like statistics to social interventions and disciplines like social work and psychology. Novel technical practices of care managed the newly identified 'social' needs of the population by marking each problem as discrete – health or the regulation of housing, for example – and addressing them administratively, each with their own set of experts: psychologists, social workers, public health workers, teachers, and so on. Yet even while each problem was defined and regulated

8   While I lay these out in linear fashion, I want to be clear that they coexist. They endure even though they have different starting points and get recomposed in relation to one another.

through technical means, the moral duty to others in the social order – the idea of 'social sympathy' – was at the heart of this formation of political care. To care meant to foster a politically constituted population – eventually conceived as a nation – over the course of a lifetime by way of social solidarity, and this took the shape of the welfare state, which developed precisely to govern from a social point of view.

The belief in the welfare state as the best model of political care has waned in recent decades. Neoliberal restructuring globally has put a focus on privatizing responsibility, and this deploys a different government rationality, one that invokes 'the market' as a naturally given mechanism (even though 'the market' is in fact politically constituted through this very invocation). The retreat of the welfare state has been accompanied by what James Ferguson and Akhil Gupta (2002) have called 'transnational governmentality': NGOs, activists, international organizations, and corporations that now govern in zones the state has ceded or abandoned.

Humanitarianism is a relatively expansive form of transnational governmentality (Agier 2013; Fassin 2011; Pandolfi 2008). While care is absolutely central to humanitarian government, these forms of care do not produce and protect society (or the social) but rather a concept of universal 'humanity' enshrined in the individual human body. That is, humanitarian NGOs and their sometimes co-conspirators, human-rights NGOs, both work to create and protect a universal ethical collective called 'humanity', which is evoked as both an object of care and a source of anxiety (Feldman and Ticktin 2010) that transcends nation-states and enables the crossing of borders. Humanitarianism's specificity is that it is primarily driven by a focus on health: its goal is to alleviate human suffering via emergency medical intervention.[9] It is a form of care that addresses threats to life itself. This form of care is restricted to the temporal present. Beyond that, no promises are upheld, no long-term human condition supported, no vision of the future elaborated, and this is precisely because it is based on the logic of medical emergency. Humanitarianism focuses on the moment of physical survival, even as it always responds to a breakdown in social systems, whether this is a result of war, conflict, or natural disaster.

To be clear about the meaning of the category of humanity and its relationship to biology, ethics, and affect, it is instructive to review the relationships among the cognates 'human', 'humanity', and 'humane'. These have a long history, sometimes in tension with one another,

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9   This is true certainly in its French incarnations, such as Médecins Sans Frontières, or Doctors Without Borders, and Médecins du Monde, or Doctors of the World, which I see as founders of this contemporary form of humanitarianism.

sometimes complementary. As biological or physiological conceptions of humanity became increasingly predominant and theological ones waned, the 'human' was often understood as a category deriving from a universal, common origin, what Charles Darwin and liberal racialists saw as the biological unity of mankind (Seth 2016). However, the category 'humanity' never came to be conceived exclusively as a physiological fact. From the eighteenth century, for example, humanity became increasingly conceptualized as a shared sentiment of sympathy or benevolence, and 'humane' came to refer to the moral qualities proper to being human, such as sympathy, compassion, and ethics. This notion of humanity, related to the 'ethical subject' (Laqueur 2009, 38), did not necessarily entail shared species or biological fact. While belonging to a common species has long evoked an obligation to treat fellow humans as worthy of moral consideration, who is part of this collective has refused stable definition through biology, reason, affect, or ethics.

In the case of humanitarianism, 'humanity' as a population is only perceived and united in its suffering in moments of emergency; that is, it only comes into being during moments of crisis. Acute suffering is considered the universal common denominator, the manifestation of humanity and evidence of its existence (Ticktin 2011, 2014; Redfield 2013). Humanitarianism is grounded on the belief that this universal suffering can be recognized wherever it is found, that it can be measured and understood, and that, crucially, a response to it is morally mandated. In my earlier work, while doing fieldwork in France on the role of humanitarian organizations and practices in governing undocumented immigrants, I found that suffering was recognized and responded to by looking to the biological body, and apprehended through medical and scientific techniques and rationales considered to be universal and objective (Ticktin 2011). For instance, humanitarian exceptions to immigration law, which gave papers to undocumented immigrants in unusually difficult circumstances, measured suffering in the body. A diagnosis of HIV/AIDS or cancer could lead to papers, if one could not get treatment in one's home country; bodily proof of female genital cutting could also lead to papers.

However, what I found is that – while taken as a universal – what physical injury entails is actually far from clear: the meaning of suffering and of bodily integrity is mediated by political, cultural, and economic contexts and histories and, in particular, by transnational regimes of care such as humanitarianism. In the cases I observed, biological claims had to be translated into embodied performances that made them recognizable to those who participate in these regimes of care; that is, the patients had to be cast as worthy of compassion. French state nurses explained to me, for instance, that when they felt a person's case was particularly noteworthy, rather than let the doctor simply read the medical file to decide whether the illness warranted papers to stay in France for treatment, they would bring the doctor in to meet the patient and hear their story. One nurse said, 'The *human* does not exist for them [the doctors] otherwise; they are just statistics to be manipulated'. It was not

just about a trade in biology or biomedical diagnoses; it was about a politics of benevolence and compassion for a suffering human, one in which 'human' is joined to its cognates, 'humanity' and 'humane'. The affective and biological registers had to be combined.

In this sense, instead of being universal and inclusive, a politics of immigration based on this type of care and compassion gave papers to an HIV-positive Malian woman, an Algerian child with cancer, and a gay Moroccan man gang-raped by Moroccan policemen, making these illnesses or traumas strangely desirable conditions for immigrants. The person able to embody this paradoxically privileged position as the most disenfranchised, the most wretched of the earth, and therefore the worthiest of care is shaped by racialized and gendered images, narratives, and histories, and is inextricably related to France's history and colonial legacy. In this sense, unusual pathologies turned political: they became means to papers. This population of second-class, disabled citizens – more mobile than other so-called able-bodied migrants – became the 'new humanity' of humanitarianism, produced and protected by regimes of care that focus on morally legitimate suffering bodies.

To sum up: the moral sentiments of benevolence, compassion, and the imperative to relieve suffering are as central to humanitarian government as other sentiments (such as social sympathy) are to governing the social. But rather than producing an integrated and disciplined national population or society, humanitarian regimes of care produce the category of humanity, with its own stratifications. Of course, since my fieldwork between 2000 and 2008, humanitarianism has morphed in ways that bring it closer at times to development (Gabiam 2011; Dunn 2012; Feldman 2018) or to other forms of government of the social, which have longer-term visions. The critical point here is that while humanitarianism turns to biology as a universal and unifying force, the way affect and biology come together actually distinguishes populations in stratifying ways both within nation states and on a geopolitical level.

Planetary care

I turn now to the humanitarian rescue of nonhumans. What sort of moment is this, when the kinds of care reserved for society or humanity are extended to the nonhuman? Does this mean that there is an extension of the category of humanity itself and, consequently, an extension of the types of stratification I just mentioned, now on a planetary scale? Or are there other collectivities in formation, and, if so, what are they and what holds them together?

While animals are selectively integrated into a politics of humanity in these new ways – acknowledging that the flipside and larger context for this is the overwhelming nature of

institutions and practices like factory farming and animal experimentation, which affect billions of animals – I do not mean to suggest that they represent a novel terrain of incorporation; they have been variously included in and excluded from this category of universal solidarity over time. Animal-welfare organizations have long existed; for instance, the American Humane Association has been involved in animal relief since World War I, when the US War Department asked them to help animals used in war (American Humane Society, n.d.). Similarly, animal-cruelty organizations have a long history, having aided in the project of creating a compassionate sensibility in humans and, as such, in producing the very category of humanity (Esmeir 2012). The first movements against animal cruelty in the United States and Europe were founded in the nineteenth century. The American Society for the Prevention of Cruelty to Animals (ASPCA), for instance, was founded in 1864 in New York. To be sure, this was very much a middle-class movement, used to civilize the lower orders (Sznaider 2001). But antivivisectionists also based their arguments on the moral commonality of animals and humans, stating that a person capable of hurting animals was equally capable of hurting humans (Schlich, Mykhalovskiy, and Rock 2009). So if animals have always been alternately inside and outside of humanity, what is new here? How has the form and subject of care changed?

On the one hand, there is an aspect of this type of care that is familiar, bringing the logic of emergency to bear on humanist forms of care for nonhumans, such as protection, rescue, benevolence, and compassion. On the other hand, there is something significantly different in play: ideas about planetary health recombine biological and political ecologies without necessarily relying on moral sentiment. Indeed, I want to suggest that the humanitarian rescue missions and the various NGOs, scientific technologies, and forms of expertise that incorporate and care for nonhumans actually come together in ideas of planetary health and, in particular, in the concept and practice of One Health, which, to reiterate, is an initiative that addresses the health of humans, animals, and plants (or ecohealth) together, and treats them in relationship to one another.

What is this planetary form of health and of care?[10] One Health came into being primarily to counter zoonotic threats, which are on the rise. Those who work in the field suggested to me that the threat of avian flu had spurred One Health approaches, but there are now many more zoonoses to be addressed, such as SARS, Zika, and Ebola. One Health initiatives recognize and target the flexible and porous boundaries between human and animal, but this approach, despite the use of similar humanitarian technologies and logics, is less about shared moral sentiment than sameness in biology, disease, and treatment across species and

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10   See the Planetary Health manifesto for one example of this (Horton et al. 2014).

environments. In an interview with a veterinarian from Agronomes et Vétérinaires Sans Frontières, or Agronomists and Veterinarians without Borders (AVSF), I was told that while One Health was a new approach to zoonoses, it nevertheless builds on previous development projects, such as those that helped peasants live off their land in sustainable ways, that is, projects where hunger alleviation was often the driving goal. For AVSF, One Health addresses animal health in the context of family farms, taking seriously mixed animal and human health in pastoral zones. In other words, it grew out of a very different tradition than animal rights.

Indeed, with many One Health projects, animal suffering is seen as a sentinel or indicator of future human pandemics and impending ecological disasters; in 2003, birds suffering from infection with the H5N1 influenza virus were rendered visible primarily as a potential threat to humans. As the anthropologist Frédéric Keck (2013b) writes, some animals can send early warning signals of ecological catastrophe precisely because of the analogies or deep homologies between their biologies and that of humans.

One Health includes projects such as studies of the genome of the Brazilian Zika virus, but in the context of its imbrication with humans; for instance, a One Health approach notes that the virus's first appearance in Brazil overlapped with increased air travel to South America from the Pacific Islands. One Health projects also include the development of an infrastructure in Vietnam to monitor pathogens circulating in both human and animal populations, looking at how frequently they are exchanged (Rabaa et al. 2015; Faria et al. 2016).[11] There are One Health initiatives that have traced how overfishing in certain contexts can lead to the consumption of bushmeat, which in turn can lead to the transmission of zoonotic diseases like Ebola (Conversations on Planetary Health 2017). In One Health, care can involve anything from new agricultural and development practices, to conservation practices, to emergent medical techniques that build on the shared biology of humans and nonhumans,[12] to new vaccinations, to biosecurity and preparedness practices such as surveillance and culling. In this context, care does not designate a positive emotion connected to the goal of sustaining life. As Michelle Murphy (2015) writes, care need not be associated with happiness or affection; she reminds us that care also means to be troubled, worried, uneasy, or unsettled. For instance, in the face of the H5N1 threat, the Hong Kong government decided to kill (or cull) all live poultry (Keck 2013a), but this did not mean that there was a lack of care. In fact, as Keck (2013a) writes, many care deeply about sentinel

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11   For more, see the Metabiota papers; Metabiota is a research start-up focusing on One Health and run by Dr. Nathan Wolfe.

12   For instance, see Natterson-Horowitz and Bowers (2013).

animals and value them as such, from microbiologists to farmers to Buddhists to government officials. Biological homologies need not only be understood through the lens of threat; they can also reveal what we gain from the shared treatment of humans and nonhumans, and they necessarily raise difficult questions about the current hierarchical valuation of lives.

In this sense, One Health foregrounds a connectedness that can make new ways of seeing, being, and responding possible (Craddock 2015). As Rosi Braidotti (2013, 162) states, One Health is a 'daring' interdisciplinary alliance, 'the perfect post-anthropocentric concept'. That said, there are a number of critiques of this One Health approach: for instance, we might see an imperial and mastering gaze behind the idea of 'One World, One Health', one that presupposes a singular space, one biocommunicable planet (Hinchliffe 2015). Indeed, from my interviews, I learned that One Health projects are often literally built on the infrastructures of old colonial health outposts; One Health programs run by French NGOs, for instance, are mostly located in France's former colonies, often in the same precise geographic locations. The implied geopolitics of One Health thus might actually do the opposite of reimagining the possibilities for interconnected care. According to Steve Hinchliffe (2015), One Health could produce two distinct and unequal worlds, a global North (where this conceptual world is made) and a global South (Braun 2007), where the ontological commitments are about bounded objects (like 'health' or 'disease') rather than entanglements.

These critiques are important, and I mention them in order to stimulate new ideas; taking the critiques seriously is precisely how I want to push the framework into other speculative or potential landscapes. How might we think about One Health as both reinforcing extant distinctions but as nevertheless opening new ways to think about forms of political, entangled care?

To prompt different visions, I want to elaborate on how One Health works. I write from the perspective of the global North, where new 'planetary care' experts are getting trained but not primarily where the interventions are taking place, so I describe this side of the process. New fields of expertise, such as veterinary forensic science and animal psychiatry, exemplify this turn to biological commonalities and collectives even as they continue a certain affective humanitarian practice. The field of veterinary forensic science started in 2008, at the University of Florida, with the support of the ASPCA (Cooper and Cooper 2007). The work of this field entails identifying, measuring, and alleviating animal suffering and helping promote animal and human health and welfare. Veterinary forensic scientists work in the new, 'humanitarian' teams I have mentioned: they join disaster-response teams, emergency animal services, and animal relief projects. For instance, as I found out in my interviews with staff from the American Humane Association, veterinary forensic scientists work with the

association and their disaster-response team, which went to Haiti. These experts engage with the same emergency medical techniques and technologies as other (human) emergency-response teams. They help identify victims of disasters; they also help identify whether an animal might have suffered, using forensic techniques.

But veterinary forensic science also comes into play during public health scares, which are central to One Health missions; these vets deal with biosecurity hazards that involve animals or agriculture, with similar types of threats framed as bioterrorism, and with emerging diseases. They investigate zoonoses that affect humans and animals, and most recently, they have been concerned with emerging infections, from bovine spongiform encephalopathy or BSE (mad cow disease) to Ebola and Marburg disease. In this sense, we can recognize here an expanded or altered version of what Andrew Lakoff (2010) has called 'global health governance', which combines humanitarian technologies and biosecurity logics. Yet this field of global health has expanded to include the ecological field and to produce new ideas of what might constitute 'health', ideas based on increasingly nuanced senses of biology that include not only populations but cells, bodies, and, in particular, exchanges and connections.

One Health's language of biological connection seems to join humans and nonhumans into new collectives, which are both produced and governed by new forms of care. But, even more interestingly, perhaps, notions of shared suffering – of moral sentiment – actually now come to be spoken of in biological terms. Multiscalar biological connections, what I have been calling 'biological ecologies', are now used to explain behavior, but without repeating simplistic notions of biological determinism. In humanitarianism, as we saw, the language of shared suffering is the basis of a conception of universal humanity. While suffering is also spoken of in the language of biology – particularly biomedicine – it is always mediated by sentiment and, in particular, by certain kinds of racialized and gendered narratives that make some suffering more recognizable as such and hence worthier of compassion. That is, sentiment is smuggled into biological measurements. In the case of One Health, however, this configuration of sentiment and biology is different: sympathy and compassion are not what promise to hold a collective (society, humanity) together; rather, the biological and cross-species connections, especially neurological and immunological, create a particular set of collectives that can become the subjects of care. In what might be seen as a complete reversal of the logic of political care thus far, biology itself is seen as producing sentiment, without relying on the often narrow logics of sociobiology.

Empathy is central to many of the discourses around human-animal interactions and to the forms of expertise that feed into One Health projects, such as veterinary forensic science. Human empathy for nonhumans is seen as something we should be fostering and protecting, for instance, via animal-cruelty laws, for which forensic vets provide evidence.

Yet empathy is now seen as worthy of protection and cultivation in nonhumans as well. New scientific models of empathy that emphasize its neural substrates have become part of these human-animal discourses, rendering it not a human or social process but a biological one, one that crosses borders between species; the way I see it, this scientific conception invites a new typology of relationships. Indeed, what are emphasized are the biological structures and evolutionary mechanisms that join humans and animals in new ways, which are not about sentiment but about the biology or neuroscience of sentiment that we share. This is both an interesting return to and departure from nineteenth-century ideas of biological connections, which were seen to underlie the unity of humanity; while biological histories are once again seen as critical, this time they might open up the opportunity for different, cross-species collectives.

Indeed, those who argue that biological mechanisms are involved in empathy increasingly look to the field of neuroscience for support, through a model called 'the social brain'. The social brain, as the anthropologist Allan Young (2011, 2012) writes, is called 'social' both because brains can share feelings (that is, the brain has social capacities) and because it emerged through social evolution (the brain has social origins). Here, the 'social' refers to forms of sharing and entanglement. Social neuroscience is interested in how empathy is encoded in the brain, in some ways, making the mind a phenomenon of the brain. Young explains that 'human nature', as an Enlightenment concept, was previously understood as a bundle of innate and universal dispositions, appetites, and capacities used to separate humans from nonhumans; these were largely about being self-interested, autonomous, moral, and rational. However, according to Young, we now see a shift toward the central role of empathy in defining humanity. In this version of the human, the mind is an epiphenomenon of the social brain, where minds and brains are more permeable and empathetic than previously imagined. Some believe that 'mirror neurons' play a key role by enabling a form of 'emotional contagion' – that is, mimicry of another's emotional state through sensory neurons – skipping the conscious mind (see, for example, Iacoboni 2008, 2009; Jackson, Meltzoff, and Decety 2005; Gallese 2001).

What is interesting here is that theories of the social brain imply that empathy is not limited to humans as a species; rather, it is considered an adaptive feature of other mammals as well, a feature that emerged during the evolutionary transition from reptiles to mammals and whose building blocks are conserved across mammalian species (Carter, Harris, and Porges 2009). Indeed, ethologists join neuroscientists in arguing for trans-species models of brain and behavior and suggesting species-inclusive models (Bradshaw and Schore 2007).

Animal psychiatry, a new form of expertise also engaged in One Health, follows this model, too. From using Prozac to relieve depression in dogs to treating cats with 'territorial disorders' and parrots with jealousy, animal psychiatry is closely linked to the pharmaceutical

industry. While the psychopathologies include depression, anxiety, obsessive-compulsive disorder, and stress, what is perhaps more revealing here is the expanded application of post-traumatic stress disorder (PTSD) to animals. This is a medical diagnosis that can help authenticate the suffering of (human) victims, working (among other things) to legitimize claims to asylum or requests for humanitarian aid. Part of the longer, more complicated story is that animals were initially the experimental subjects for these drugs and diagnoses, and now they're also the patients (Braitman 2014).

There are stories of military dogs in the Iraq war suffering from PTSD (BBC News 2010). There are also stories of elephants with PTSD, recounted by ethologists, neuroscientists, and psychologists (Bradshaw et al. 2005; Bradshaw and Schore 2007). The elephants who suffer from trauma, like humans, come out of conflict zones; they have watched their parents and elders be killed by (human) poachers, and they have been displaced by the destruction (by humans) of their habitats. In this case, their trauma relates to damage to the environment or 'eco-health'. These scientists argue that elephants have lost their social or cultural fabric. They exhibit similar symptoms as humans, such as abnormal startle response, unpredictable asocial behavior, and hyperaggression – this includes young males who supposedly 'rape' and kill rhinoceroses, as well as killing humans – none of which is considered 'normal' elephant behavior (Bradshaw and Schore 2007; Siebert 2006; Phillips 2010). This has been diagnosed as a 'species-wide trauma' (Bradshaw et al. 2005).

While using recognizable sentimental narratives, those who write about and diagnose PTSD in animals ultimately turn to neuroscience to explain the abnormal behavior, pointing, for instance, to the large size of the elephant's hippocampus, which is a structure that processes memory and a prominent element of the limbic system, which processes emotions. Neuroscientists together with ethologists have called this a 'trans-species psyche' (Bradshaw et al. 2005, Bradshaw and Schore 2007) and accordingly treat elephants with similar therapies as humans. They focus on brain structures and evolutionary patterns, which work together to tell the story of the social brain. Here, humans and elephants ultimately meet and merge through their biology, shaped by common political histories of extractive capitalism, which in turn creates their common sentiment. Cross-species biological connections create collectives and dictate the forms of care, while sentiment simply becomes a way to measure biological proximity.

Speculative futures of care

One Health – as one example of 'planetary care' – focuses on collectives that include more than human, politically constituted entities; these human-nonhuman assemblages are connected through different biosocial models such as neuroscience or immunology.

Yet what is this form of care? What technologies of power does it rely upon? Ultimately, is it simply a biopolitical model, expanding the power over life and enacting forms of disciplinary care, or does it enable different kinds of affiliation, more open or expansive than government of the social, or humanitarianism?

Foucault's (1978) notion of biopower refers to the regulation of a national population, constituted and managed as 'society': the question is whether these techniques still apply in a cross-species, planetary context. Can we still talk about a normalizing society when the social has been reconfigured, and when populations operate on the basis of different biological norms? New notions of biopolitics have been proposed that allow for such visions; for instance, Roberto Esposito's (2007) idea of affirmative biopolitics – a politics of life instead of a politics over life – sets up an argument for the continual destruction of any normative system, instead defending different forms of life with their associated norms. To be sure, this sidesteps the ethical process of valuation of different forms of life and nonlife, including when and how to kill and eat other living beings, whether to kill nonhuman animals or insects that transmit disease, and so on. Such a sidestep, to me, refuses the difficult but necessary responsibility of noninnocent care.

Nevertheless, can we see the beginnings of an affirmative biopolitics or ecological biopower in the expanded technologies and politics of suffering just discussed? How should we understand the parameters of 'care'? From what we have seen thus far, One Health and other technologies such as veterinary forensic science are built on the idea of security, protection, and immunization, albeit at a different scale, one that has expanded in the types of subjects and populations it enacts, protects, disciplines, and controls. As Hinchliffe (2015) writes, it still focuses more on 'contamination' or preventing disease transmission than on 'configuration', which focuses on the context, not the pathogen by itself (see also Rosenberg 1992).

But what if One Health were to take this second path – focusing more on socioeconomic and political contexts, Hinchliffe's configuration – particularly with an expanded sense of context? What might change if we thought in terms of planetary histories and temporalities, as well as planetary scales? Finally, what might open up if we follow this logic and examine how the biological and the social are being shifted and recombined, acknowledging again that biology is always shaped by environments, never fixed? How this might produce new grammars of affect and politics?

Along these lines, I think of One Health less as fact than as potential: what do its parts enable us to think? I join a broader move toward speculative thinking as a way to go beyond the familiar place of critique in scholarship: from cutting to reattaching or recreating relations. Speculative work should not be confused with utopian projects. Locating itself in

current material worlds and working out from there, speculation takes place at the edge of what we can see, at the limit; indeed, it could simply make 'real' what is already part of a collective imagination (Dunne and Raby 2017). Speculative thinking is a blur, as designer Benjamin Bratton (2015, 14) writes, 'between the real but-as-yet-unnamed and the imagined but-as-yet-not-real'. It can be a path into the multiple futures that are lurking, one of which might be linked to the present if we help bring it into being, attending to the incipient potential in everyday life, critically engaging with things that seem familiar, and then activating different ways of understanding those things.13 This is similar to what Jarrett Zigon (2018, 2019) calls 'critical hermeneutics'; by this he means both an ungrounding and an opening; that is, we work for change from where we are, not from some entirely imaginary place.

I want to speculate about forms of care that are shaped by the specificity of each situation, with the commitment that care can and does take place in different terms and through different practices of connection and affiliation. What else could care mean in a planetary context, if we build on care as a feminist practice: caring about which things come to matter, what gets attention, and what does not? What measures should we amplify or include?

The project of One Health prompts us to imagine new key measures of care. For instance, we cannot simply think in terms of the social or the biological, because One Health destabilizes these categories – shows their entanglements – and thereby invites new categories and combinations. As we saw, some of these biological models use the language of the social, but this is not the same concept of the social at work in social theory. In fact, these models alter this relationship by changing temporalities, once again, adding a different measure of space-time to the mix. That is, in the accounts of the social brain, we learn that social histories are built into biology, but these are histories that function on an entirely different temporal scale, and they go far beyond nation-states or other political entities. Indeed, these histories began well before there was 'society' or the 'social'. They are histories that take place in evolutionary time and that manifest in the deep homologies among species, the genetic kernels or molecular lineage that we share with nearly all creatures.

In recent accounts of immunology, we hear about embodied, sedimented memory, which again functions on an evolutionary timescale. Cross-species connections can be established

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13   This kind of work draws on a different understanding of the speculative than that which informs theories of speculative realism. In the latter case, the speculative is precisely that to which we have no direct access. Much of this work attempts to create space for a world beyond the human and beyond human constructs like epistemology and politics: this space can only be speculative because it cannot be known (Morelle 2012; Viriasova 2017).

through a form of distributed memory in the body; that is, immunity can be understood as the memories of previous encounters between an organism and its environment, and can be used to measure the distance between species crossed by the same pathogens (Keck and Ticktin 2015). This model evokes a different human-nonhuman collective, one created across time and space, between species and microbes, histories and encounters. Could we follow this model as a new way to measure our connectedness and our history, and as a way to produce new forms of care?

More specifically, according to the argument first made by the anthropologist and medical doctor David Napier (2003; see also Napier 2012, 2017), which is now more broadly accepted in the field, not only does immunology build on memories of our encounters with the Other over time, but our immune systems seem designed to seek out the Other, to explore, rather than to shore up defenses against it. In a broad body of work, Napier (2003, 2012, 2017) notes that changes in science demand recognition of our cross-species interdependencies and of the fact that the 'self' is actually more deeply imbricated in its environment than previously realized. For instance, the field of epigenetics demonstrates that inheritance is a function of how organisms are related to their environment; Napier (2017) suggests that we need to know this to adjust creatively and rethink health for the future. Models of immunology based on Cold War ideas of the invasiveness of others – including microbes – have been challenged. Instead, Napier argues that the immune system is more akin to a search engine – going out to explore, to do reconnaissance work, to gather information – than to an army defending against invaders. Rather than protecting us in the present, the immune system is engaged in making a future we can live in, creating new cells and a future evidence base. As such, it ensures that living beings are familiar with the diversity of our larger environment and can adapt to it. The immune system is constantly, recursively changing us (Napier 2017), and in this sense, our bodies and the bodies of both human and nonhuman populations serve as archives.

These immunological histories are not histories of stable beings – individual or social – but of encounters. They are grounded on relationality, not autonomy: they require we understand the world as a web of living beings. Hannah Landecker (2015) tells a similar story about the 'biology of history' by way of antibiotics and antibiotic resistance, showing how human historical events have materialized as biological events and ecologies. Antibiotic resistance allows us to see that genomes are historical composites formed across species. The biology of history takes place in the temporality of both human and natural histories: for instance, today's bacteria are specific to late industrialism (Landecker 2015).

Can we take these scientific theories and use them to conceive new possibilities? Can we begin to imagine new forms of care – not beyond the human but beyond anthropocentrism – and their corresponding collectives? Can we explore their potentialities, tease them out,

perhaps make them generative? What could future care and future health look like? Indeed, such theories build on understandings of biology – such as epigenetics – that also recognize different types and scales of history. That is, once again, while these collectives may be based on multiscalar biological connections, they push us to imagine beyond simple explanations of biological determinism. The types of care made possible by thinking with One Health force us to combine care for political and biological ecologies: this is political care with an evolutionary temporality and planetary reach. Care in this sense is not a form of moralism or an accusatory stance but grows out of an understanding of the condition of life on earth as interdependent and relational, an approach that favors attunement over control.

Let's return to the kernels of possibility made thinkable by One Health. Care here implies the need to see the embodied memories of the immune system as including the various entanglements that produced this memory, that is, not only encounters with viruses but the conditions in which viruses might have flourished and the conditions in which various humans and nonhumans were living such that viruses crossed species boundaries. We might think of Ebola in 2014, and the conditions in West Africa that allowed this virus to travel, from the histories of human-animal relations, to the histories of resource extraction that led to the lack of health care infrastructures, to the histories of quarantine as a structure of treatment that forced borders closed and conflated invasive viruses with invasive people. If we keep tracing these various actants that have produced this embodied memory over evolutionary time, if we care about it, we will invariably expand the frame to densely knotted human and nonhuman encounters that are historically deep as well as diverse. They connect in various ways across space and time, and they need to be understood as being as responsive to capitalism as they are to climate change.

In this sense, to care and to produce future health is also to foster an understanding of the endurance of events through time, understanding the different entangled scales and timelines: geological, epochal, practical, and embodied. This is a version of what Cymene Howe (2016) calls a 'chrono-mashup with divergent scales'. In this speculative version of health, we need to care for different kinds of histories at the same time and find ways to keep them in the same frame, despite their different scales. As Tobias Rees (2018) suggests, drawing on the work of Michel Serres, we need to approach each moment and each being as a temporal composite, as a form composed of different elements moving in time, from the assemblages they were a part of in the past to the assemblages they have formed now.

What might this look like concretely? We can speculate, starting from the empirical examples raised by One Health. As I see it, if we take seriously theories of multitemporal, multispecies connections, it would require that when we care for animals or dogs in postearthquake Haiti, as these new humanitarians do, that if we care about a thing's political ecology, we must also

care about their biological history of encounters. Politics is explicit here and brought back in with biology. Care would still combine affect and biology, just differently so, with wider and longer attention.

Let's imagine a scenario that begins with slavery, then, because this is where the history of dogs in Haiti begins. They were imported along with slaves, often to guard those same slaves (Boisseron 2006). Dogs evoke a strong association with colonial forms of violence and domination. The dogs brought to the Americas by Spanish colonists were trained to attack humans; one can call it a form of 'canine warfare' (Johnson 2009; Beckett 2017). In Haiti, the figure of the dog is tied to the unmaking of persons, both in the sense that they were trained to eat human flesh and in the sense of being reduced to a status below the human and animal, that is, to dog food (Beckett 2017). So, to care for the dogs in Haiti after the earthquake hit in 2010, one would also need to pay attention to the history that brought them there, and to care about the humans that they came into being in relation to and in tension with, and to care about their entangled human-nonhuman biologies, shaped by environments of slavery, rebellion, exploitation, and poverty. In this scenario, racial and colonial histories and revolutionary hopes would have to be put in the same temporal frame as evolutionary histories, producing a multiscalar set of assemblages that demand very different kinds of care. These might involve using dogs as sentinels for human diseases to which Haitians are more vulnerable; it might mean tailoring medications and vaccines to be shared between dogs and people. But care could also manifest quite differently, for instance, by revisiting the history of slavery directly, to exorcise it by way of the dogs. This could produce a desire to let these dogs die – to reverse history and put human life in Haiti first. Or, care for the dogs might mean clearing the way for discussions about reparations for humans, nonhumans, and the environment. Care can mean a form of conscious neglect as well: to let things be.

Or, take another example, bringing together work already being done by indigenous communities, activists, and scholars through innovative projects and networks like the Endocrine Disrupters Action Group14 and stretching it into forms of future care. In this frame, caring about the high rates of cancer in certain indigenous communities, such as the First Nations residents who live downstream from the tar sands in Alberta, Canada, would require caring for and treating people at the molecular level. That is, it would require expanding the frame to think about the two hundred years of industrialized production,

14   EDAction is a coalition of academic researchers concerned with the widespread presence of endocrine-disrupting chemicals in our bodies, commodities, built environments, industrial emissions, ecologies, waters, and atmospheres. For more information, see their website: https://endocrinedisruptorsaction.org/.

from coal-based energy to petroleum- and plastic-based processing, to render visible the chemical byproducts that have transformed all of our molecular structures, which reveal a 'chemical regime of life' on the planet (Murphy 2008). This is a different, expansive type of caring, not of the sentimental or moralistic sort but of the kind that notes other forms of changed being (or ill-health) in the same frame as that of the human, even while admitting that we still have hierarchies of care and different valuations of life. That is, it would place the round goby fish in the same picture as First Nations communities around the Great Lakes – both have changed sex ratios, in response to endocrine-disrupting chemicals in the Great Lakes waterways (Murphy 2013) – and it would treat them and their health alongside that of humans. These forms of care draw on timescapes that go beyond capitalism, which measures and cares for everything in terms of production and expansion. Care might involve cultivating these new cyborg fish, seeing what world they lead us into. It might require developing measures of molecular damage and linking them to forms of compensation or restitution; it might include new legal forms that recognize the entanglement of past injuries and future harm in ways that go well beyond human lifetimes.

A new form of care might then call into being new understandings of legal personhood. Treating rivers as persons is one such attempt, as in the recent case in New Zealand, where the local Māori tribe of Whanganui in the North Island has fought for the recognition of their river – the third-largest in New Zealand – as an ancestor (Roy 2017). The new status of the river as legal person means if someone abuses or harms it, the law now sees no differentiation between harming the tribe and harming the river as ancestor because they are one and the same body corporate. This, too, is a newly recognized form of care for the nonhuman, albeit legally – instead of medically – framed and enshrined.

Governing the Whanganui River in New Zealand as a legal person actually means understanding the river and iwi people as single unit, in a way reminiscent of One Health projects and of the larger idea of care for a thing's political ecology (Puig de la Bellacasa 2017); this becomes clear in one of the passages in the August 2012 agreement between the Crown and the iwi: 'health and well-being of the Whanganui River is intrinsically connected with the health and well-being of the people' (Youatt 2017, 11; see also Hsiao 2012; Shuttleworth 2012). Recognizing the conjoined nature of humans and rivers gives leverage to people to fight against toxic sewage, oil spills, and the (im)purity of drinking water, and it also takes seriously the health of the shoreline and the surrounding landscape: any affected citizen can bring suit by showing how they or their health is affected by the changing conditions of the river. But this legal model also opens up new possibilities for future measures of health by including different ontologies of human-nonhuman relations (Youatt 2017); that is, it partially includes indigenous conceptions of personhood that reject the notion of nature as a separate entity distinct from humans. By attributing personhood to a

river, the law opens the way to imagining and enabling a world populated by very different kinds of collectives.

This is the kind of care that I see as the potential evoked by a project like One Health if we take it and imagine. Such forms of future care could produce more capacious collectivities, which could better address injustices and inequalities by expanding, or redirecting, the subjects and objects of attention. And these speculative types of care would move beyond humanist and moralist forms that involve civilizing, protection, and rescue. In this sense, they would go beyond humanity as an ethicopolitical category, and insofar as they would focus on more uncomfortable, collective entanglements – insofar as they enact noninnocent forms of care – they could open the way to new political and ethical possibilities and new forms of flourishing that enable, not curtail, the vitality of life.

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