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Among the colony: Ethnographic fieldwork, urban bees and intra-species mindfulness

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Abstract

As a part of a larger ethnographic study of urban beekeepers in New York City, this article considers the challenges of conducting multispecies participant observation – being in the field with both human and non-human informants, beekeepers and bees. Keeping in mind the intra-active nature of human/insect entanglements, we explore how to interpret and translate the actions of another species while resisting anthropomorphic descriptions. Through a decentering of the authors, the bee is reflexively rendered as a non-human informant and an actor in its own right. The embodied experiences of conducting participation observation with humans and insects are used to speculate on the possibility of an ontology of bees and the idea of intra-species mindfulness. This work is in dialogue with the field of multispecies ethnography, actor-network theory and critical animal studies, positioning the bee though networks of ethnographic data and translation.

Keywords

bees, beekeeping, actor network theory, critical animal studies, New York City, non-human animals

Bees are milling around on the landing strip, the part of the hive box that looks like a front porch or a deck. Though they never stay still on the strip, ever. They land and take off with intention and without crashing into each other, seemingly oblivious to the thermometer. Their thin articulate legs are weighted down by pollen from foraging expeditions. Purposeful forays with the world outside the immediacy of the hive. Temporarily exposed, human eyes focus to find the queen, who is scurrying around the frame with her attendants quickly following her. There are eggs in hexagonal cells, larva in others, and wax. Inside the box it's even warmer from the kinetic drive of their

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> activity. How do the bees summon the energy, while the humans around them wilt so quickly in their efforts to check on them? There is accidental irony in this relationship. An interspecies exchange that appears out of sync, as the humans move deliberately and speak in hushed tones while the bees hum fast and loud. (Fieldnotes, Crown Heights Brooklyn, June 2011)

When humans describe bees, we are limited by the introductions made by other humans. In our three-year, multi-sited visual ethnographic study of urban beekeeping in New York City, our informants and teachers have guided us – they have created and interpreted the social worlds of the bee. However, we have not lost sight of our 'other' informants, tens of thousands of bees. We consider what the bees themselves have taught us, flirting with the possibility of understanding and translating their experiences beyond simplistic anthropomorphic reflections. As best we can, we set aside our selves – our speciesism – to get closer to them, to linger in the space of the bee.

As we have learned from our immersions in the field, honeybees are social insects that live in colonies and maintain their survival through harvesting nectar and pollen from flowering plants, and, in New York City, most especially from tree blooms. Flying from blossom to blossom, they enable pollination or fertilization and sexual reproduction of plants and trees. Honeybees convert the nectar to honey through enzymes in their stomachs. Honey, referred to humorously as 'bee barf' by an informant who is a seasoned beekeeper, is used for sustenance and to raise brood (their offspring), and the pollen provides protein for the bees' diet.

Honeybees do not survive as individuals. They must be part of a colony, what entomologist Thomas Seeley describes as a 'harmonious society, wherein tens of thousands of worker bees, through enlightened self-interest, cooperate to serve a . . . common good' (2010: 4). Bee colonies are networks made by the bees; they intra-act with the human world, yet they are sustainable without human intervention. In many ways, as pointed out by beekeepers, honeybee colonies are prototypes of sustainability and its members are skilled in arcology. They create all they need from their environments and grow their own homes through producing beeswax made from secretions from their abdomen. They design living spaces of hexagonal cells that are multi-purposed – used continuously for reproduction and storing honey. Honeybees are praised for their efficiency and interdependency, are adept architects, and a species that humans have come to rely on. As philosopher Freya Mathews (2011: 50) has written, bees are integral to the planet's 'inexhaustible regeneration of life' through pollination, one of the 'great metabolic processes of the earth' in addition to photosynthesis, thermal and atmospheric regulation. And yet, as we argue, it is only when they go missing, for example through Colony Collapse Disorder (CCD), that they began to tangibly appear to us (Casper and Moore, 2009).

Like honeybees, humans are also social creatures who would likely not survive as solitary beings. On a basic emotional and psychological level, we require intimate

and physical connections with significant others in order to feel and be human. We also connect with non-human species for various comforts, whether through a pet cat that purrs at our touch or the utility of a chicken laying an egg that becomes our breakfast. Urban beekeepers, the people who most often establish artificial hives, illuminate how we (humans) seek varying degrees of communication and interaction with other species. In this case, rather than traditional animals, domesticated or otherwise, we make contact with insects. The word contact borrows from Haraway's (2008) notion of 'contact zones', a conceptual term used to describe the entanglements and interrelations between species that do not share native languages, but are otherwise co-present and co-mingling organisms.

Many animals and objects are already decidedly 'other' and, as such, seemingly impenetrable by human measures or interpretations. However, bees are perhaps not 'silent witnesses' but buzzing witnesses to humans – whereby children and adults are narrating the bees' behavior through somatic clues – the buzz, the sting, the smell, the productivity. We are typically most comfortable revealing and criticizing the anthropomorphizing that humans (including ourselves) do to bees. Transcripts and photographs become familiar terrain for us to dissect and examine as we search for the lurking larger narrative arcs and relationships to human order and disorder. We feel safer in our analysis when we are examining bees as an object in relation to other objects, whereby everything is brought into being, including bees, through the relationships we map and interpret.[1] In this article, we include photographs we took while in the field to show the physical relationships between bees, their keepers, and the local environment. These photos capture our experiences and provide us with a means to document beekeeping in action. As in sociologist Mitch Duneier's *Sidewalk* (Duneier and Carter, 1999), a visual ethnography of the homeless in NYC, we include images to reflexively offer more vivid cultural descriptions.

Moving beyond human interpretations of bees and anthropomorphic descriptions, we consider the possibility of an ontology of the bee, for, in Bruno Latour's (2005: 128) words, 'A good Actor Network Theory (ANT) account is a narrative or a description or a proposition where all the actors do something and don't just sit there.' We describe gaining entrée into the field of urban beekeeping and how we were initially transformed by our human subjects and, subsequently, our insect subjects. As we narrate our account of being with beekeepers and bees, we reflexively offer a rendering of the bee as a non-human informant, an actor in its own right. Our goal is to contribute to the hopeful field of multispecies ethnography (Kirksey and Helmreich, 2010) and to position the bee though networks of sociological and ethnographic data and translation (Callon, 1999). Bees are insect participants who, along with human participants, help us piece together a tangled ethnographic story about where urban landscapes, beekeepers, we as researchers, and bees themselves *become*.

Critical animal studies, which informs our work, suggests that we become advocates for the animal and set aside our human impulses (Adams, 1995;

DeMello, 2012), and yet as ethnographers we are limited, with few tools to inhabit the spaces of bee-ness. It is decidedly more difficult to interpret these non-human actors. We don't speak their language, share their culture, engage in mutually negotiated intimate acts with them. Since we cannot have a direct relationship to the bee, we are instead engaging in practices of circulating reference. The work of translation, for ANT and for us, is paramount here. For our purposes, Actor Network Theory provides us with an initial way to consider bees as part of a social network whereby bees can be both discursively produced and simultaneously materially present. There is a looping effect whereby the classification of bees by humans constrains the material experience of bees, potentially altering the bees themselves (Hacking, 1995). Our only access to bees, other than direct observation as we walk the streets of New York City and happen upon an individual bee, has occurred through the urban beekeepers translating what they do for us. In turn, our work is then translating what they do for our audience. And on still another level of mediation, we all (humans) are translating for the bees. The directionality of translations appears to be from human to human or from bee to human, but not from bee to bee about humans – that we can ascertain.

In other words, we can study humans who interact with bees, and we can deconstruct how other humans describe bees – in gendered and raced ways, or how other humans understand bee behavior as rooted in some sustainability narrative – but we do not have the ability to see how acts of translation may be happening among bees about humans. For instance, we know what happens when someone is stung. In the process of checking hives, Lisa Jean was stung on her neck, which releases a pheromone that alerts the hive to a potential threat. This pheromone acts as a trigger for other bees to come and sting, as it happened twice more on her thumb and lip. Clearly we can describe what the bees are doing as translating human presence to other bees as threatening. But could it not be true that bees see honor in their death and relish the opportunity to pierce the flesh of another creature as a means of creating a heroic narrative of their lives? Or could it be that bees transmit their venom through a stinger in some flourish of an orgasmic rush leading to a little death? These types of translations about bees as narrated by humans seem more deeply rife with misrepresentation than when we narrate what members of our own species are doing. The layers of abstraction become murkier.

Animal studies scholars address the role of interactions and intersubjective exchanges between human and animals in social worlds and within the research process (DeMello, 2012; Taylor, 2007; Arluke, 2003; Alger and Alger, 1997, 2003; Myers, 2003; Sanders, 1993.) Much of the important work in this area focuses on pets like dogs and cats, domestic companion animals we have intimate encounters with (Haraway, 2003, 2008).[2] Moving from mammals, anthropologist Hugh Raffles' *Insectopedia* (2011) explores our close encounters with insects and uncovers the vast continuum of insect/human entanglements – from being assaulted by malarial mosquitoes in the Amazon, to betting on Chinese cricket fights. However,

we were under-prepared to account for and interpret the actions of insects: we knew them as pests, not pets. The *how* to do it aspect posed challenges for us, but just as significant is the question of *why*. That is, why should we as sociologists seek to understand the experiences of bees? Setting aside our human standpoints (theoretically and reflexively), seeking to engage with bee-ness allows us to dwell in the strangeness of the ontology of another species. Through this, we began to move further away from the socially constructed distinctions between human and animal, and the nature/culture binary.

Engaging in the intersections between humans and bees, and entertaining the possibility of an ontology of other objects, enables us to reposition them (the bees) through decentering ourselves (c.f. Bennett, 2009; Morton, 2010). In this article, we propose an ethics of *intra-species mindfulness*, which we admit is at a larval state. Intra-species mindfulness is a practice of speculation about non-human species that strives to resist anthropomorphic reflections. It is an attempt at getting at, and with, another species in order to move outside of our human selves – while also recognizing that both 'human' and 'other' are cultural constructions. In our practices with bees, we used our own sensory tools of seeing, hearing, touching, tasting, and smelling bees – their bodies, their habitats, and their products. Getting with the bee meant acquiring new modes of embodied attention and awareness. Getting at the bee has also meant that we must confront the reality that the human species is created, materially and semiotically, through interconnectivity to bees. In this light, our fieldwork and analyses pay particular attention to the everyday lives of the bee, attempting to decenter our human selves in the process – to become more animal in our intra-actions with bees – becoming with them instead of becoming as distinct from them. Our creation of the term and practice of intra-species mindfulness is predominantly drawn from the work of Karen Barad (2007). Her articulation of intra-action is where worlds come into being through the mutual constitution of entangled entities. This requires that, as fieldworkers, we interrupt our tendency to think of bees as the object of study and that we resist thinking of ourselves or the beekeepers as static, bounded, and permanently fixed entities. Instead we need to see all – ourselves, bees, the beekeepers, and other objects – as bodies that are in the world and whose boundaries are created through entanglements and conflicts.

Beekeeping in the city

There are approximately 230 different species of bees living in the greater New York Metropolitan area.[3] As the city swarms with human activity, these bees buzz as they pollinate fruit, vegetables, plants, and wildflowers, playing an integral part in local urban ecology.[4] Since being imported from Europe in the 17th century (Horn, 2005), honeybees have lived throughout the five boroughs of New York with or without the aid of humans. Yet, until very recently, most people never thought of them as a species that 'naturally' belonged in the city. Unlike pigeons or cockroaches, bees don't spring to mind when we think of urban animals. Honeybees have become more visible in the ecological and cultural life of

New York City and other American cities thanks in part to a revived interest in urban farming, locavore food movements, green consumerism, DIY culture, and a demand for gourmet boutique honey.[5]

At the same time, entire hives of bees have been *disappearing* in vast numbers due to a syndrome referred to as Colony Collapse Disorder or CCD, which has been widely publicized in the media since 2006 and caused by a panoply of vectors – parasites, mites, pesticides, industrial shipping. CCD is of great consequence to all of us – not just those who hold professional or personal interest in these invertebrates, such as entomologists and beekeepers. Honeybees pollinate flowers and crops that provide our food supply, operating as nature's invisible labor force. The annual value of bee pollination to US agriculture is estimated at over $15 billion (Hansen, 2012). Bees' economic and agricultural utility to humans is quite considerable, and we rely on no other insect as much as the bee.

Within the larger backdrop of the CCD crisis (Suryanarayanan and Kleinman, 2013), concerns over environmental sustainability, and holistic health and culinary fads, urban bee colonies are being established and nurtured. Humans are lured to beekeeping in the midst of the metropolis where systems of information and concrete collide. These urbanites manage the hives in their backyards, community urban gardens, apartment rooftops, or attached decks, wherever space and access allow. Bees are welcomed across NYC neighborhoods that vary economically and culturally – they are tended atop the Whitney Museum of Art in Manhattan and community garden plots in the Red Hook and Bushwick neighborhoods of Brooklyn, both undergoing gentrification.[6] Bees' new status in the city was heralded in a *New York* magazine article covering 'the everything guide to urban honey', suggesting readers 'think of them as your new pets' (Helmetag, 2010). Humans and bees are crossing paths due to increased human intervention. They are negotiating their respective places within the post-industrial urban terrain – a locale that often presents challenges for both species.

Our ethnography examines how human understandings of bees and our connection to this insect is linked to the emergence of sustainability as a public issue and other contemporary environmental concerns, particularly animal extinction. We analyze how bees have merged within media and consumer culture to become a part of nature that is significant and potentially savable. We ask: what do bee narratives signify about the contemporary cultural moment? The ubiquity of honeybee stories in the popular media, and the ways they are framed, signals a paradigmatic shift not only in how we think about and interact with bees, but in how our relationship to 'nature' is broadly understood. It is difficult to understand and feel that an individual can have an effect upon cultural shifts, economic collapse, environmental degradation, and agricultural production systems. But perhaps helping the bees – learning about them, getting invested in them, and caring about them – is one way a person can make sense of the world in uncertain times.

Our fieldwork also examines the emergence of the greening of cities, specifically the recent trend in urban farming. The photo in Figure 1 was taken at Eagle Street Farms, a roof top garden and apiary in Greenpoint, Brooklyn, home to waste

Figure 1. Brooklyn-based beekeepers on green roof inspecting hives.

treatment plants and superfund sites. Some urbanites are purposefully cultivating a more natural environment in spaces that have historically been marked by concrete, buildings, and metropolitan consumption.

Roof top farms, community-based farm programs, and the introduction of chickens and bees are all tied to larger cultural trends, personal lifestyles, and philosophical perspectives that involve cultivating and integrating eco-politics into everyday urban life. Media texts have framed the emergence of the contemporary urban beekeeper and farmer, a demographically new breed of human cultivators (sometimes referred to as hipsters). Educated, relatively financial stable, racially white, and often female, this cohort lends credibility and interest to a phenomenon that isn't necessarily new.

In an era of global ecological crises (deforestation, species extinction, climate change) and CCD, scientists, activists, and citizens are invested in saving the environment and the bee. This saving takes many forms, from green consumption to lobbying for policy change to doing urban beekeeping as a hobby. These actions can seem inert, either too small (buying locally grown food or honey) or too large (ending monocropping agribusiness). Regardless, within these environmental

interventions, the story goes, the onus is on humans to fix 'nature' or the 'environment'. Again, man must dominate and wrangle ecological problems in a way that saves us all – vulnerable species, fellow humans, and the planet. We are fascinated by the allure of the bee (and its varied meanings) and how humans engage in food production/consumption as well as the creation of human/animal subcultures. And simultaneously, we want to trouble this androcentric prerogative, but it is difficult to shed the standpoint of well-meaning sociologist, the fleshy human that encumbers.

Importantly, people have cultivated urban community gardens, kept bees and other non-traditional animals as pets and livestock before the recent media coverage of this new trend. In immigrant enclaves, ghettoized and working-class neighborhoods, bees, chickens, and pigeons are kept as food and pets without much media attention, and have been for centuries. Like water towers, pigeon coops in particular are signs of an urban skyline, making appearances in many films as rooftop scenery or urban hobby. As a cultural endeavor, breeding and flying pigeons in particular has been a way for white ethnic and non-white ethnic blue-collar men to connect with the environment and forge social connections. As sociologist Colin Jerolmack (2009) shows in his ethnographic study of pigeon flyers in NYC, keeping pigeons cultivates solidarity across Italian, Hispanic, and African American men of different ages. Pigeons and their human caretakers exist alongside the new wave of beekeepers and urban farmers, but they are largely invisible in the media. The demographic difference between these groups splinters them socio-economically along educational, ethnic and class lines.

Throughout the course of our fieldwork, we asked beekeepers why they thought so many young people seemed to be gravitating towards urban homesteading, beekeeping, and working on collective city farms. Caroline, a new 20-something beekeeper said, 'it may have to do with the economy tanking . . . people are cutting back'. Her friend Gabriel agreed and added, 'in times of great economic crises and even war, people want to take care of themselves. An example would be victory gardens'. Having some sort of control over their food source and lifestyle is appealing for many younger people today, particularly middle-class college graduates who have a degree of choice and some discretionary time and income.

Of course, you can't control how much you get paid or whether you get laid off, but you can try and keep bees alive, raise chickens, and maintain a garden. Like the 99 percent of people in the Occupy Wall Street movement, some are employing a DIY resistance to a larger cultural 'forgetting' of how to do basic things. It's a small scale and intimate effort to take charge of the space around them. There is also an attractive and clearly oppositional component about this trend in terms of living in a major global city and being able to say that you farm and keep chickens and bees. There is definitely a cache in keeping bees – the equipment, the sting, the historic and cultural mystery surrounding the hive. And it's a more tangible way to engage with 'nature' and animals beyond a walk in the park or caring for a dog or cat.

Cerise, a beekeeper, reflected on the new generation of urban farmers and beekeepers:

> I think there is a few generations of being lost – not having a connection to land or to sense of things, cycles. I think that is a fundamental need. I think that skill-based craft has been missing for a few generations. I think that people are putting value in that and experimentation is also a draw for beekeeping. I think beekeeping is an entry point, you don't have access to land, poor soil or you are in the city means you can't do much. You can keep chickens and you can keep bees. You can brew beer, you can bake bread. That's about it.

Fascinated by the political and cultural buzz surrounding bees, we, as long-term Brooklyn residents with no beekeeping experience, were curious about our own neighborhoods. We wondered how urban places were made meaningful in part through the presence of honeybees, our insect neighbors, and how and why beekeepers cultivated hives. Entry into the worlds of NYC beekeeping was easy with our human informants, as they were open and generous with their knowledge and experiences. However, during each hive visit we were in the field with thousands of bees too. They swirled and buzzed in the air around us, landed gently on our arms and legs, dive-bombed our heads, and on occasion stung us for disturbing or accidentally crushing them. For the first time, we were in the field with another species, non-human informants who are by their nature already 'othered' by humans. We grappled with the dilemma of how to translate their experiences. For example, we were advised that when bees are angry and alarmed, they buzz more loudly. As one experienced beekeeper told us, 'bees have perfect pitch and an A-sharp means a pissed off hive'. Our ears did register this sound, but we were always reliant on our human translators to interpret the bee's communication for us. It was audible, but we were never sure as to what it meant. As Hamilton and Taylor (2012) argue, ethnographic approaches to studying animals call for creative and new methods. Tuning our human ears required a methodological twist.

Intra-species mindfulness and actor network theory

We are not bee whisperers and we are suspicious of those who claim to be – rather, we tentatively suggest we are 'qualified' to study certain human beings and their behaviors and actions. For us, and for other humans, the bee has its own historical and temporal social location – the bee does things to cultural life – just as the bee does exist as a real and material insect with a positionality. We are human interlocutors interrogating our own and others non-consensual use of the bees at this particular moment in contemporary life. We want to better understand what bees might need to live more productively; however, our quest for what sociologist Max Weber referred to as *verstehen*, or empathetic understanding of our research subjects, is deeply limited and suspect. Standard for most qualitative research studies, we feel it is important that we provide the methodological activities and decisions

that frame our emergent epistemologies of bees and humans – their relationships and interactions. It is the ontology of the bee, as both entangled with humans and as beings/things in their own right, that we struggle to reckon with. We engage in this murkiness and clumsiness between the idea of the bee, humans' material relationship with the bees, including use of them, and the actual bee as its own thing.

Intra-species mindfulness works to track the frictions rather than pin down the object. Bees certainly exist outside of human consciousness, but how can humans know bees without being limited by our own humanism – our speciesism? We examine the intimacies we have attempted to establish with bees, but there is something missing in the examination since we can only apprehend bees through our limited senses. What we smell, taste, hear, and feel, in addition to what we *think* about bees, is filtered, diluted by humanness. And as women and feminists, we are concerned about the inexorable domination that we have (or think and act as if we have) over the definition of the situation (Thomas and Thomas, 1928).

Embarking on an animal studies research project, we were drawn to Actor-Network-Theory and to and Critical Animal Studies (CAS), as the non-human figures so prominently in our fieldwork. Taking into account the imbalance of power in our non-reciprocal relationships with our insect subjects poses questions of interspecies ethics and exploitation. As researchers entering sites of human/bee interaction, our access to bees is facilitated through their human caretakers; thus, we are already at a distance from the bees. We come to know our non-human subjects in large part through their human keepers; we were never alone with bees in the field. This inherent disconnect and imbalance of power (we are humans who study bees in relation to humans) is addressed in the field of CAS (see Wolfe, 2003; Adams, 1995; Gruen, 2011). While aligned with animal studies as an interdisciplinary approach to investigating human/animal relationships, critical animal studies advances two frames of critique: 'first, a critique against animal studies itself and its often accompanying detachment from the actual life conditions of most animals; second, a critical theory approach, broadly defined, to human/animal relations, with close attention to concrete forces of power and resistance' (Pedersen, 2011: 66). CAS is allied with animal liberation and activism, advocating the merger of theory and practice. The production of academic knowledge is politicized and critiqued, but also used to examine sites of oppression where animals and humans intersect.

ANT is also complementary to the feminist/queer project of self-reflexive and embodied attention in understanding the experience of self and other. Grounded theory, while certainly a productive deductive analytic methodology, was sometimes insufficient since it requires anthropocentric (human face-to-face) interviews, and transcriptions for coding and analysis – all deeply reliant on shared language. While urban beekeepers are captured by this method, insects have yet to be successfully explored by the Straussian method. Bees are crucial *actors* in our study in a sense that 'any thing that does modify a state of affairs by making a difference is an actor' (Latour, 2005: 71). Science studies and CAS, through decentering the anthros, dwells at the ontological murk of relations.

Similarly, Barad's (2007: 91) conceptualization of agential realism takes issue with human exceptionalism. She suggests that research projects need to move from humanocentrism: 'Making knowledge is not simply about making facts but about making worlds, or rather, it is about making specific worldly configurations – not in the sense of making them up ex nihilo, or out of language, beliefs or ideas, but in the sense of materially engaging as part of the world in giving it specific material form'. For us, the bees, their presence, or absence (resulting from CCD, which has most certainly increased the ranks of urban beekeepers), their production and their unpredictability, make differences in the larger ecosystem of NYC including commerce (farmers' markets), proliferation of vegetation, and human and non-human intra-actions.

By wrestling with the bee as an agent in the construction of engaged alliances with humans, flowers, and food production, we move away from strict distinctions between human and animal and toward an enmeshed and porous relationship wherein the species are entangled. As such, we do not suggest that bees are exclusively boundary objects, that is, the same object brought into different arenas, where the object's flexibility allows it to be used for local purposes and inscribed with local meaning by different social worlds (Star and Griesemer, 1989). Rather, we see the species as more dynamic and suggest that humans don't inherently or naturally have a monopoly on all of their actions or their fate – we cannot possibly ascribe all the meanings to the bee. The bee can make meaning for itself.

Moving beyond anthropomorphism: Following the bee

A 'follow that bee' approach has led us from the culture(s) of New York City beekeeping to networks of military engagements that utilize drone and swarm warfare (Moore and Kosut, 2013), to medical practices such as medihoney™ and apitherapy, and to immigration policies (Africanized bees as a threat to national borders and native populations – human and bee). Here we return to the bee itself through the act of collecting ethnographic data, to bring it closer into focus as a non-human actor, rather than an insect-object defined by its human likeness (i.e. the bee as a social insect, the hive mind, etc.) or utility to humans as pollinators and honey producers. We worked to get out of our own way as we conducted an api-ethnography, an embodied study of bee and human intra-actions in real time, that considers bees as cultured beings that traffic between worlds of the hive and the urban landscape. This work is situated as part of the growing contribution to multispecies ethnography, located at the intersections of environmental studies, science and technology studies, and animal studies, focusing on understudied organisms. Multispecies ethnography is a new genre and mode of anthropological research seeking to bring 'organisms whose lives and deaths are linked to human social worlds' closer into focus as living co-constitutive subjects, rather than simply relegating them to 'part of the landscape, as food for humans, (or) as symbols' (Kirksey and Helmreich, 2010: 545).

Of course, social scientific studies of insects are not unheard of. Indeed, sociobiologist Edward O. Wilson with his colleague Bert Holldobler (1990) has dedicated much of his research to understanding the life of another social insect, the ant. Wilson famously likened ant behavior to a form of socialism where self-sacrifice for the good of the colony is commonly practiced. As a biologist, Wilson also 'discovered' how ants communicate through the use of pheromones. So captivated by the species, Wilson has also written a novel entitled *Anthill* featuring battling ant colonies and human land prospecting. Controversy over Wilson's sociobiological ideas are well documented, as scholars question the theory that there are evolutionary links between insect and human behavior. And still we must consider that the bee may have an evolutionary or biological linkage to human behavior. As Hugh Raffles (2011) reminds us, the natural history of insects and human history are interconnected.

In part because of their productivity, efficiency, and self-sacrifice for the greater good of the colony, bees are coded as *model insects* (Moore and Kosut, 2013) becoming a circulating reference in which entomologists, artists, beekeepers, and politicians attach humanness to them. Bees may be ascribed activity in the form of anthropomorphizing (i.e. the coining of the term 'waggle dance' to describe their 'language' system) and popular metaphors such as 'busy as a bee', but we have rendered them idle by not accounting for how bees themselves move within and affect the world – as a species that pollinates, makes honey, wax, royal jelly, and propolis, and collects pollen for human consumption and for the sake of its own survival first and foremost. We know we inscribe human qualities to make sense of, and in some cases attempt to dominate, non-human species and objects. But it is essential that we become more critical and aware of how easily we succumb to anthropomorphism and its effects.

Anthropologist Kay Milton (2005) suggests that the term anthropomorphism has become too large and unwieldy. She coined the term egomorphism to describe the process of getting at the genuine, meaningful, or empathetic connection to the non-human animal. Rather than using a universal or homogeneous 'human' as the reference point for attributing characteristics to bees, her approach would suggest we could use the very personal, subjective empathetic self as a way of perceiving characteristics in bees. Similarly, Matei Candea (2010) calls for an intersubjective engagement with animals in the social world, rather than rendering animals as simply symbolic. Candea's (2010: 249) engagement with meerkats cultivated his anthropological practice of inter-patience whereby he cultivated inaction to observe the meerkat: '*Inter-patience*, then, is the mutual suspension of action, a cease-fire of sorts.' He argues that he is able to build a relationship with the meerkats (even though he is not native to the Kalahari Desert where they live) through a process of detachment through a 'standing back' and enabling their (his and the meerkats) mutual habituation. He then came to understand the ways that he and the meerkats were engaged and detached in a forming of 'being with the meerkats' instead of being together with them – in the first instance, being with, he is intra-acting in a simultaneity

and in concert rather than in the second instance, being together with, he is interacting with them as distinct beings.

Taking note of sociologist Jen Wrye's (2009) reading of Latour, we do not wish to argue that beekeepers are simply anthropomorphizing bees. Rather as Wrye reads Latour, she argues 'that there are no singularly human qualities; inanimate objects always possess the qualities and do the work credited to humans' (Wrye, 2009: 1051). Bees themselves, and especially their work, are concealed by how we align ourselves with these insects, and how we steal/take/collaborate in highly uneven circumstances. Within human macrostructural and technological organizations bees are obfuscated and detached from the complex ecological, agricultural, political and cultural systems that they constitute.

Bees as actors: Our 'other' research subjects

The experiential and embodied knowledge of beekeeping involves more than becoming adept at visual identification of certain signs of healthiness, frailty, or disease. There are corporeal cues (auditory, olfactory, visual) and intimate moments where beekeepers intersect with the hive, as not only vulnerable humans but sensual bodies.

Being with the bees involves smelling, hearing, tasting, and feeling them within the human body. As former urban beekeeper Meg explains, beekeeping can be focused and measured: 'There is something very Zen about the process of taking care of the bees. You have to slow down and really pay attention because you don't want to upset them and you don't want to get stung. When inspecting a hive, your mind can't be anywhere else, it has to be on the hive, observing exactly what is in front of you.' The act of beekeeping involves perception, a responsive performance of mind/body and bee. Much like a dance or practicing Tai Chi, there is a beauty in the movement and flows – choreographed and improvised at the same time. The perfomative nature of beekeeping calls for embodied learning and sensitivity. Here, the bee becomes the educator/teacher through a co-mingling and penetration of the senses. Becoming attached and in sync with a colony or a hive is a ritualistic process, but it is also a sensual one where insects and humans connect, overlap and collide. Some of these collisions – the sting – are unpleasant and downright painful, but others are fragrant, delightful, therapeutic, and delicious.

If we push aside the human being and the humanness, we can begin to comprehend the bee as a material actor. For example, bees are responsible for the pollination of crops, but it is the farmer who actually plants and harvests. Even though almonds, broccoli, onions, blueberries, and many other dietary staples would not exist without the work of bees, this labor is rendered invisible. Humans don't see the bee in their dinner. Likewise, bees manufacture honey, but it is humans who harvest the honey, making the product of the bees' labor real and useful to us. Bees make honey to stay alive while they 'over-winter' through the coldest seasons of the year – not to be sold in a co-op as a locavore niche condiment or as a sweetener in industrial cereal production. We are aware of the simplicity of this statement,

but offer it as a means of resuscitation. The bee becomes drained of its energy through the production of honey and its appropriation by humans, so that it is only energized as part of human activity or as an overly busy pest. The act or action of bee-ing, literally, is what we seek to call attention to, beyond simply the moment in which we energize (legitimize) their actions through human harvest or transform or categorize them for the sake of our personal interests (i.e. as research subjects, creators of holistic treatments, etc.).

In this context, we follow the path of the bee through a socio-technical network, as a conceptual framework for identifying, organizing, and comparatively analyzing patterns of social interaction, between objects, humans and insects. As Latour clarifies, a 'network is an expression to check how much energy, movement, and specificity our own reports are able to capture. Network is a concept, not a thing out there. It is a tool to help describe something, not what is being described' (2005: 131). Our laboratory is vast, encompassing different positions of engagement through which we overlap with the bee. Locations such as rooftops and postage stamp backyards where hive boxes are established and tended are the intimate theaters in which we (i.e. bees, beekeepers and ethnographers) co-mingle as species. It is here that we as ethnographers learn the cadences of the beekeeper and bee, the divisions of labor in the hive, and routines of the colony. These sites are fixed and local but at the same time temporal, lasting through spring and summer.

The hives branch out further beyond the block to the neighborhood of flowering trees, weeds, and native plants, which are connected to larger ecological landscapes. Bees are part of green consumption as the products of their labor feature prominently in farmers' markets, just as their image adorns t-shirts that read 'save the queen'. In the interest of environmental sustainability, bees materialize on green roofs and rooftop gardens. It is not just when the hive box, that man-made wooden structure teeming with bees, is opened that we are engaged with the species. Bees are a vital component of local and commercial agricultural production and also a part of kitchen pantries as well as our own embodied desires, preferences, and tastes. In a very concrete sense, we all embody bees throughout the course of our lives because they are an integral part of our everyday diets. Bees produce much of the food we consume whether through pollination or honey production. The embodied labor of bees constitutes us physically as a species. We also metaphorically constitute bees as highly productive 'model insects' that we can learn from. Bees leave traces in their short yet diligent three-month life connecting insects to non-human animal others, to humans, industrial agriculture, to laboratories, to geographies, and to nation-states.

Beekeepers: Entrée to bees through human actors

Since our work delves into human and non-human worlds, it raises questions about the limits of ethnography. *Ethno* means people or folk and ethnography attempts to understand and explain a people and their culture through studying and writing about them. Even though they do not speak, we would like to be able to engage

Figure 2. An active frame of honey and drone brood.

bees as 'informants' while at the same time we are suspicious as to whether it is at all possible. Yet, we learned a great deal from consorting with the bees themselves. And still there are considerable hurdles to 'communing with bees' in ways that garner deep understanding of their ontology or to have 'generalized symmetry' between our interpretations of all actors in the network of urban beekeeping. As with many qualitative research projects and monographs, 'research' is told through narrative structures where characters (most commonly humans) are presented in rich descriptive paragraphs seasoned with the characters 'own' words or in-vivo codes. These words, excerpts from interview transcripts, are then interpreted and provided as evidence of larger theoretical claims. They become 'data', speaking of not only singular experiences but of ethnographic writing and academic knowledge. We are cautiously confident about our ability to interview and understand the urban beekeeper as a member of our own tribe. Understanding the subjective experience of bees is a more complicated endeavor.

While we had previous exposure to bees, we were certainly guilty of swatting them from our bodies, thoughts, and consciousness. Dodging their flights into our personal space, bees had been an insect to avoid rather than one to appreciate, admire or get to know. When we considered bees, it was from a narcissistic position of how they bothered us. Sure, bees had agency since they came unbeckoned into 'our space'. But we could not understand the bee as having a life unto its own.

We needed to acquire new modes of attention to detail that enabled a mindful access to the bee. And still we struggle with our own sociological instinct to use anthrocentric mirrors to interpret the bee.

However, our lack of experience and ability at real communing with bees meant that we needed to stay within our comfort zone. Hence, we started with humans. We learned about the bees through the beekeepers – while also allowing the beekeepers to reveal themselves to us. We asked: Who were these fellow urbanites that took on the 'hobby' of raising bees? What motivated them? How did they become proficient? What was the everyday embodied practice of keeping bees? At the same time, we were aware that by engaging this particular group of humans, our understanding of bees was already framed for us in particular ways.

Hive checks: Meeting the bees

We were struck by the amount of energy, time, and work that goes into urban beekeeping.[7] But also, we were not quite prepared to find bees in locations that offered little evidence of nature in the form of trees, plants, grass and other living organisms. As our fieldnotes describe, we initially saw bees as out of place:

> We climb the two or three flights of stairs to get to the roof. Faces red and panting. Door opens and feet squish into, literally sink into, the rooftop. Like standing on a warm, scratchy, tar-paper cookie. Manhattan skyline opens up in the distance, and we survey the more mundane buildings, and the elevated subway train that snakes through Brooklyn. Views slow us down for a moment. High summer in the city, reading all the signs. Squinting, panning around 360 degrees and there is the white box, the beehive. It is surrounded by vents and chimneys and doors, plastic ripped up kiddie pools, dead mangled antennas, bleached out broom handles, satellite dishes, leaves, cig butts, paint cans and yes, flying bees. No people around but us, standing in an archeology of rooftop detritus. We can't help wondering, is this a good place for bees to live? Are they OK up here in this elevated wasteland? Definitely not hospitable to humans for long, but when the hives are opened we find that the boxes are full of active bees, and fresh warm honey. Evidence that bees can live on top of the city.

Humans make homes for them wherever they are able, and with a shortage of real estate and green space, bees, like humans, can end up in urban places that are less than scenic. As shown in Figure 3, Selena, one of our informants, is sugaring her bees (a form of pest protection –considered part of a non-treatment approach since it does not rely on antibiotics) on a rainy rooftop in Brooklyn where they survive amidst brick, metal, concrete, tar-paper, plastic, dirt and garbage.[8]

These hive checks were often the beekeepers' way to control swarms and inspect the bees for mites, such as varroa. This allowed us to not only learn the basics of hive maintenance, but the divergent ways that people keep bees and how they interact with and for them. We quickly learned that while there are common

Figure 3. Beekeeper sugaring honeybees in Langstroth hives on NYC synagogue rooftop.

tasks to be performed, such as checking to see if bees are healthy and have enough space to live, each beekeeper has their own philosophical and emotional relationship with their bees. Starting with the ability to locate the queen, identify the drones, and watch new bees being born, we were soon able to assist beekeepers and the bees at increasing the size of their living environments by moving frames around. On occasion we would just 'hang out with the bees', watching them on their landing strips, taking off and returning from their foraging expeditions.

Each inspection was colored by the beekeeper – they set the tone and the rhythm for our own encounters with these unfamiliar insects. For example, some respondents suited up in full gear and asked us to limit our conversation and quiet the tone of our voices so as not to disturb the bees. In these instances, we respected the work from a distance (usually a few feet away) and had a chance to see how beekeepers move and embody the practice. We got close to the hives themselves when we were invited, or when it felt un-intrusive to poke our heads close to the humming bars of wax, comb and honey. Other beekeepers, often unprotected by veils and suits, ungloved, and excited to show us their hives, commanded us to dive in (sometimes it felt a little like a dare). It was as if the bees in collaboration with their keepers were

Figure 4. Inspecting top-bar frame hives in bee yard.

throwing off the usual power dynamics and having some fun with us as researchers – they had the upper hand. Figure 4 shows beekeepers inspecting hives at Anarchist Apiaries with and without gear – some have veils and jackets while others are unprotected. As we got over our initial anxieties about the bees, we shed the prophylactics (veil, gloves, etc.) designed to protect us from the penetration of a sting. This physical freedom helped us to reorient ourselves with the bees as a species, and within the conceptual framework of our study. Nonetheless, as the following fieldnotes describe, while entrée with humans was easy, our immersion into the field buzzing with bees was by no means smooth – more often it was overwhelming and uncomfortable:

> I begin to hear voices and see makeshift boxes, crooked wood and metal structures. These are the beehives, and like old buildings, you wonder if they are strong enough to house anything. People are working the bowed hives, bent over. XXX has a white veil on and is bent over and helping split up hives, looking for queens, eyeing up any signs of life – both good and bad . . . She's moving purposefully and finds a Queen somehow amidst a full healthy frame of bees that is overflowing with larval gooey activities. Great for her but I'm going to have to touch all this mess without gloves, veil, suit. Within ten minutes I am sweaty, coated with dirt and starting to itch, just from looking, I haven't even moved towards the bees yet, just away from them as they breach the space around my body. Out of my league/space.

After getting over our neophyte fears and trepidations, we slowly adapted to handling and moving screens of bees around. We got used to bees zooming for our heads, and we reacted calmly when a bee took a temporary seat on our wrist or pant leg. Bees landed on our skin, penetrated our bodies, bounced off of our faces, and got entangled in our hair. We were excited to stick our fingers in juicy combs of honey while bees were still frenetically and energetically making it. The varying levels of ethnographic participant-observation we were encouraged to do introduced us to the practice through specific types of embodied participation. Being with the bees involves smelling, hearing, tasting and feeling them.

On occasion, our somatic interspecies interaction involved getting stung. For the first time, we were injured by our informants and also killed them, as honeybees die when they sting. We accidentally stepped on bees, which is something we never experienced before in fieldwork – killing our research subjects. But we also had an opportunity to save our research subjects, as we delightedly rescued them from drowning in water bowls. In some ways bound by the disciplinary traditions of our training and institutional ethics guidelines, we realized that our interactions with the bees could leave them more vulnerable. We can only speculate about their vulnerability, but we became mindful of the consequences of our unwieldiness and our presence.

Becoming bee-centered

As Latour (2005: 61) states, 'social scientists have too often confused their role of analyst with some sort of political call for discipline and emancipation'. Perhaps this statement strikes a chord because it is so deeply true, albeit perhaps an argument more accessible for someone in a privileged social location (Casper, 2000). Our own humanist liberal projects get in our way of being with bees. We want to maintain our stance as mindful fieldworkers and yet we feel a sense that our work should at least reveal the injustices that happen to other species in the name of 'helping them'. How can we both notice 'associations' and 'controversies' in producing the groups of bees, beekeepers, general public, military institutions, pharmaceutical industries, farmers' markets, or gardeners and at the same time maintain a stance that there is indeed oppression of one species over another going on? As social scientists we stammer to find a way to make our mark on the field of sociological, feminist, ANT, and animal/insect studies.

CAS is fraught with political calls and as we rely on these literatures to inform our work; we are drawn into ongoing debates within the interdisciplinary field. As discussed by philosopher and animal rights activist Steven Best (2009: 21), there is trepidation concerning the surge of scholarship on non-human animals.

> For academics whose commitment to animals is strictly abstract and theoretical, nothing more than an interesting topic of research and form of academic capital, there is no contradiction here. But for anyone who understands the real, concrete suffering of animals and the logical consequences – i.e., veganism and animal

> liberation – of valuing them as living beings rather than as signs, referents, texts, and publications, the contradiction of speciesists working in the field of animal studies is startling. . . . After all, it's fun, interesting, the new wave, 'progressive,' and the scholar who begins work in this field might get some new publications, make new contacts, kick-start an incipient career or revivify a flagging vocation. Thus, one finds carnivores, pro-vivisectionists, and garden-variety speciesists operating in an academic terrain where a considerable number of theorists view animals as historical referents and abstract objects of research, rather than giving urgent attention to those beings who live and suffer now, to the thousands of species teetering on the brink of extinction, and to the profound obligations we have as scholars to dramatically highlight these problems and to take aggressive action to protect and liberate present and future generations of nonhuman animals.

He urges a commitment to end animal suffering through pursuing animal liberation, animal activism, and veganism. It seems to us that our work straddles this divide between being 'fun scholars' who understand the bee as a object manipulated by human and produced in multiple texts for our interpretation, as well as being deeply motivated to study bees as a species that are deployed in multiple nonconsensual arenas. We want to use intra-species mindfulness to recognize the way we are co-constituted with bees and also to focus our attention on bees' suffering – or our contribution to it.

As ethnographers, we are grappling with questions regarding how we can speak for and about a non-human species. How do we de-center ourselves as the bees' interlocutors? In the post-modern era, the notion of 'going native' – over-identifying with your subjects and losing critical stance – has been critiqued for its inherent emphasis on objectivity and empiricism (Geertz,1988, 1999, 2000; Emerson et al., 1995; Pink, 2000). As Geertz writes (1999: 16):

> To discover who people think they are, what they think they are doing, and to what end they think they are doing it, it is necessary to gain a working familiarity with the frames of meaning within which they enact their lives. This does not involve feeling anyone else's feelings, or thinking anyone else's thoughts, simple impossibilities. Nor does it involve going native, an impractical idea, inevitably bogus. It involves learning how, as a being from elsewhere with a world of one's own, to live with them.

We suggest that perhaps we were 'going animal' a bit in our pursuit of an active remembering of ourselves as part of a multispecies world. Although we could very handily assist during a hive inspection or honey extraction, we have not become beekeepers in our process of three years in the field. Tending our own bees would have been an invaluable learning experience; however, we were unable to establish a hive in part due to lack of rooftop access to an apartment building or a suitable backyard. Even though we did not keep our own beehives, we have developed an extremely different relationship to bees than that with which we started this project. To paraphrase Geertz, we have better learned to live with them.

As far as we know, there is no scholarly or scientific concern that human researchers could go native over their engagement with another species. We cannot see, act or communicate like a bee so the risk of our adopting their world-view seems quite impossible. However, there is a sense that our 'native' humanness is decentered through our engagement with the bee. Indeed when discussing our research with others, it is always dicey when we seem to hold an empathetic stance toward the Africanized honeybee or when we consider the seemingly unavoidable suffering of bees for human survival. As we get at the ontology of bees, we also see them through what we perceive to be injustices – the forced labor of industrial honeybees, unstable immigration status based on their country of origin (Africanized bees), or massive extermination when squatting in another being's home. It is as if we have abandoned our own tribe, the humans, and occupied this traitorous, at worst, or naïve, at best, position of caring for an insect that might only live three months.

This research project and our ongoing relationship with bees and beekeepers have made us more unlike many other humans who have limited experience with insect worlds – though we could not say if it makes us more like bees. And what can we imagine about how our research might have changed the bees themselves, barring the ones that we accidentally killed? They surely noticed when we opened their hive boxes, even though they appeared to be so deeply focused on their tasks. Our being with them for those moments seems so insignificant to their lives, yet it was very meaningful for our human informants, just as it was for us. We wonder how this project and other myriad human interventions, including those intended to help and save bees, affect them as a species. Perhaps the CCD crises, in which bees are literally disappearing, is the bees' attempt to avoid contact with humans, to move away from us.

We cannot prove this bee-centered theory, but we can begin to speculate using intra-species mindfulness as an ethical method that understands that animals have a world that is unknown to us. Intra-species mindfulness works to reveal our intra-species relationships of co-constitution whereby we become human through our engagement with non-human animals, and it strives toward a way to describe this enmeshment through de-privileging language. Through visual observation, sensation, taste, sound, and forms of affect, we can attempt to access or get at what is happing to bees, and other non-human animals we are enmeshed with.

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Notes

1. For anthropologist Bruno Latour, there's a 'democracy of objects' in which no body or no being or no thing can possess ontological priority over anything else. However, for Latour, an object can be STRONG or WEAK, depending on the number of relations it maintains at any given moment.

2. There is much interactional research on animals who are not traditionally defined as pets – see Weider's (1980) analysis of laboratory chimps and the concept of minded-ness/inter-subjectivity; Whatmore's (2001) study on elephants and tourism networks; and Jerolmack's (2009) ethnography of pigeons in New York City, among others.
3. There are 4000 species of bees in North America. Our focus is mainly on honeybees, which are one type among 20,000 species of bees that each has their own idiosyncratic characteristics and behaviors.
4. Some native plants that are known to be good for bees include: daisy, aster, lavender, mints, sunflowers, Heather, Sedum, Sages, Borage, Echinacea, Salvia, Rose, Snapdragons, Verbena, Buddleia, Poppy, Marigold, Fennel, and Queen Anne's Lace.
5. Beekeeping has also blossomed in other major American cities such as San Francisco, Los Angeles, and Chicago, as well as smaller municipalities.
6. Although bees are a new cause and sometimes a trendy 'pet', beekeeping has not always been a welcomed practice in the city. Bees have been considered as territorial invader and therefore human/bee relationships have also caused controversy within urban municipalities. The New York City Department of Health voted favorably towards lifting a decade-long ban on beekeeping in March of 2010. The practice was officially outlawed in 1999 under Mayor Rudolph Giuliani, when honeybees were included on a health code list as menaces.
7. Typical tasks of beekeepers are to purchase or inherit a 'package' which is 'beekeeper speak' for 3 pounds of bees and a queen, who has been separately bred, or a nuc, four or five frames from an existing and working hive including a queen. These bees are installed into hive boxes and are sometimes fed pollen patties to help them to get established over the springtime. Beekeepers check the bees periodically to ensure that the queen is healthy and laying brood – brood chambers are mostly filled with worker larva.
8. Sugaring is a form of pest protection, where the bees are dusted with powdered sugar so that mites and other potentially destructive invaders cannot attach themselves to the bees' bodies. It's an organic and simple pesticide that presumably keeps bees safer and healthier.

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