Article

# Feeding the flock: Wild cockatoos and their Facebook friends

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#### Abstract

Wildlife is persisting in urban areas of Australia even though white settler colonialism has resulted in the large-scale destruction of forested landscapes. While many bird species are in decline, the Sulphur-crested Cockatoo has found emergent opportunities for flourishing within the built environment. Cockatoos are actively generating relationally constituted spaces, drawing humans into urban ecosystems that are 'more-than human' places, abundant and lively multispecies communities. Beginning in 2011, yellow tags attached to the wings of cockatoos, along with a smart-phone app and a Facebook page, have enabled scientists to collect data about these birds' movements. These tracking technologies were quickly co-opted by an emergent public for their own purposes, including speculating about the personalities, relationships, intentions, and desires of individual birds. Interspecies friendships formed between humans and birds - involving shared understandings, emotional resonances, ongoing social exchanges, and utilitarian arrangements. We used the wingtags and the associated digital infrastructure as an opportunity to experiment with new modes of collaborative research and teaching in multispecies ethnography. Bringing together a flock of academics and students, we explored emergent social spaces involving people and birds. While many participants who fed the birds worried that they would become tame, we found multispecies flocks were fleeting associations where wild and unruly behaviours redoubled as people offered up food. We found that wildness emerged in intimate encounters with other species, encounters that were often characterised by shared but unequal vulnerabilities. Some cockatoos have been killed, after conflicts over property

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Eben Kirksey, Deakin University, Locked Bag 20000, Geelong, Victoria 3220, Australia. Email: eben.kirksey@deakin.edu.au damage led authorities to identify them as nuisance animals. Against the backdrop of asymmetrical risks, we studied flocks of birds as models of, and models for, fleeting forms of association and collaboration. In these spaces, feelings of interspecies attraction quickly alternated with agitated and uncomfortable experiences. Amid animated encounters, people explored the ethics of inclusivity and conviviality.

### Keywords

Multispecies ethnography, social media, friendship, urban wildlife, Sydney

## Introduction

Just behind Sydney's iconic Opera House, flocks of white cockatoos interact with tourists, office workers, retirees, and other regulars in the Royal Botanic Garden. Some of these Sulphur-crested Cockatoos (*Cacatua galerita*) sport yellow wing tags, bearing unique numbers (see Figure 1) These birds were originally tagged by one of us as part of a collaborative research project to study 'site-loyalty, population size and foraging, as well as roosting and breeding habitat preferences' (Davis et al., 2017).<sup>1</sup> Sulphur-crested Cockatoos are predominantly white with no pattern and are thus extremely difficult for most humans, including biologists, to tell apart based on physical characteristics. The Wingtags Project has changed this. Now we know that Lemon (056) breeds annually in the garden and commutes most days – foraging on balconies in the nearby neighbourhoods of Potts Point and Woolloomooloo where people offer nuts, bread, cookies, and birdseed. Lawrence (025) goes between the botanic garden and Sydney's Central Business District (CBD) where a jeweller regularly feeds him sunflower seeds out of an office window.

An electronic infrastructure was developed to enlist public participation in studying the cockatoos. Sydney residents were encouraged to report any sightings of tagged cockatoos by e-mail, via a web page, or a smart-phone app. A multitude participated during the first four years of the project (2011–2015), with 14,705 valid cockatoo reports by over 1200 people. The Cockatoo Wingtag Facebook page registered over 30,000 'likes' and became a lively



**Figure 1.** Participants remarked on the charisma of Columbus, the first bird given a wingtag (001), and avidly followed his exploits on Facebook. Picture courtesy of the Wingtags Project.

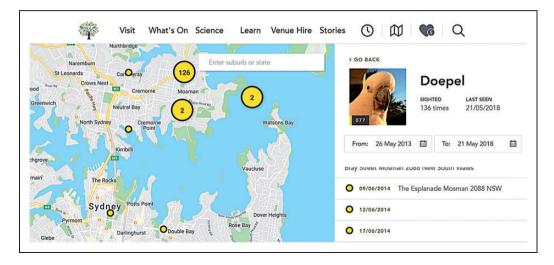


Figure 2. One of the friendlier birds in the wingtag study (077) has been sighted over 130 times. Map and picture courtesy of the Wingtags Project.

forum for discussions about the exploits of particular birds as well as cockatoo behaviour and ecology. People began to track the latest sightings of their favourite birds (see Figure 2). Particularly charismatic cockatoos attracted a citywide following (cf. Lorimer, 2007). The lively social media presence of this project, and use of informatics technology, enabled the collection of data about bird movements at a rate that quickly eclipsed the official reporting option of the Australian Bird and Bat Banding Scheme (Davis et al., 2017). The virtual community emerging on Facebook also enabled ordinary people to relate to birds differently. Most participants in the Wingtags Project had a previous interest in watching flocks of cockatoos visiting their homes, but with the aid of these tags they began to identify individual birds and learn more about their personalities, relationships, and preferences.

If the original research project was designed to provide insights about how the birds move through and make use of their urban habitat, we used the wingtags and the associated digital infrastructure as an opportunity to experiment with new modes of collaboration in multispecies ethnography (cf. Choy et al., 2009; Kirksey and Helmreich, 2010). This paper emerged after John Martin, the biologist who tagged the cockatoos, participated in a field trip of the Environmental Humanities Capstone Course at UNSW Sydney, where students learned basic ethological and ethnographic skills while the academic faculty worked with them to interpret the emergent social and ecological dynamics. We fanned out across Sydney to interview participants - tracking individual birds as they navigated social relationships with different people and left traces in virtual spaces. While interviewing active participants on the Cockatoo Wingtag Facebook page, and directly studying human encounters with cockatoos as participants and observers, we considered a series of interrelated questions: What risks and opportunities, what situations of conviviality and conflict, have emerged for cockatoos in urban environments? What is at stake when people feed wild birds? How do technological infrastructures – namely wingtags coupled with social media – shape interactions in these particular multispecies worlds? What sorts of relationships between people and their feathered friends are emerging on, through, and around the edges of, Facebook?

This article is, in part, a methodological intervention. It is the outcome of a collaborative experiment that used 'flocking' as a method for multispecies research and pedagogy. Drawing on the multidisciplinary expertise of our team's academic members – a biologist, an anthropologist, a geographer, and a philosopher – we worked together to carefully describe the species-specific behaviours of Sulphur-crested Cockatoos. We also brought together ethological observations with ethnographic techniques to characterise encounters between birds and people. Some encounters were wild and unruly, while other interactions involved quiet co-presence and inter-patience (Candea, 2010; cf. Kirksey, 2015). The student members of our research group, our flock, spread out into the suburbs of Sydney to conduct interviews. Our interlocutors were self-selected cockatoo enthusiasts, recruited via an email sent to the Facebook group by John Martin (the group's administrator). Interviews centred on informants' ideas about cockatoos, social media, and their changing relationships with the cockatoos who visited them. Student researchers asked questions related to conviviality and conflict, feeding wildlife, as well as about interspecies friendships.

Friendship amongst animals, according to Dominique Lestel, is elective and involves 'preferential attachment to an agent without exclusively utilitarian reasons (although a certain utility can result)' (2014: 135). Odd couples, such as an ancient tortoise and a baby hippo, have prompted studies of how individuals belonging to different species are able to understand each other and form close, caring relationships (Warkentin, 2011b) Previous studies of interspecies friendships involving humans have shown that many species of birds have a propensity to negotiate culturally situated expectations about sociality, bodily proximity, politeness, and touch (see i.e. Kirksey, 2015: 137–139). We join others in writing against both overly romantic notions of friendship and against the assumption that any talk of human/animal friendships is inherently anthropomorphic (Lestel, 2014). Rather than engage in anthropomorphism – or deploy the tired tropes of 'mechanomorphism,' which involves projecting characteristics of machines onto other forms of life (Crist, 1999) – we open up critical inquiry in the tradition of multispecies studies to consider how elements of friendship may or may not be shared by other species (Plumwood, 2009: 127; cf. van Dooren, 2016: 8).

Friendships in real life and on Facebook can involve conflict, even if parties to the relationship are usually convivial (Gershon, 2011). While individual social media profiles were not developed for particular Sulphur-crested Cockatoos as part of this study, the Facebook page produced a large public following for exceptionally charismatic cockatoos - birds who were particularly responsive to human desires for interaction (cf. Lorimer, 2012). The first two substantive sections of the article, related to 'Conviviality and Conflict' and 'Interspecies Facebook Friendships,' draw on interviews conducted by students with people who had actively posted comments on the Cockatoo Wingtag Facebook page. We found that interactions on social media helped relationally constitute social and ecological spaces where wild forms of life found new possibilities for flourishing and abundance (cf. Collard et al., 2015; Wolch, 2002). In these spaces of 'messy co-presence' (Hinchliffe and Whatmore, 2006), we found wild animals finding zones of autonomy even as they negotiated complex relations of dependency and interdependence (Tsing, 2012: 144). 'Becoming a Flock,' the third and final substantive section of the paper, describes how we brought together ethological observations and ethnographic techniques to characterise wild and unruly encounters between birds and people. Ultimately, this paper is an experiment in multispecies methods, an effort to adopt and adapt the infrastructures of an ecological citizen science project to explore opportunities for research and teaching in the environmental humanities and social sciences.

#### Conviviality and conflict in the urban wilds

Sulphur-crested Cockatoos have only recently started flocking to human settlements in Sydney. When European colonisers first arrived on the eastern coast of Australia, these birds were only recorded on the periphery of colonial towns. George Caley, an English botanist and explorer (1770–1829), encountered large cockatoo flocks along rivers that were more than a day's journey from Sydney and reported: 'They are shy and not easily approachable. The flesh of the young ones is accounted good eating' (Caley, 1966: 216). Sulphur-crested Cockatoos later became crop pests: eating maize, sorghum, and sunflower seeds (Rowley et al., 1989: 24). Only in the later part of the 20th century did they become common in Sydney's city centre. While small and inconspicuous woodland bird populations decreased in the region, cockatoos increased in abundance and appeared to derive 'a genuine benefit from urbanization' (Major, 2010: 235). Periodic conflicts between cockatoos and people erupted in urban environments, even as the birds altered and adapted their behaviour to interact with people. While some people in Sydney began navigating spaces of shared risk and vulnerability to establish social relationships with birds, others resorted to violence, both symbolic and material, to curtail the presence of cockatoos.

One recent conflict came to a head in 2011, when a group of residents in eastern Sydney, frustrated with cockatoos that had been chewing through the timber window frames of their heritage-listed art-deco buildings, applied to the National Parks and Wildlife Service (NPWS) for a license to kill. Approval was eventually given to capture and gas select cockatoos. Despite local protests, and the attempted interventions by the City of Sydney Council, the property owners – sick of getting 'chewed to bits' – defiantly remained committed to their decision (Jordan, 2011; Munro, 2011). Similarly, in August 2010, the managers of the Sydney Campus Apartments – a heritage building near the University of Sydney – claimed that cockatoos were tearing chunks of wood off their building and had caused an estimated \$100,000 worth of damage. They were granted a permit to kill up to 20 birds (Hanney, 2017). Two birds were killed before the effort came to an abrupt halt due to negative media coverage, public outcry, and opposition by local politicians (Carr, 2010; Hanney, 2010)

In the midst of these kinds of conflicts, people with personal connections to cockatoos have become effective spokespersons for their continued presence within dynamic socioecological spaces of Australia's urban environments. Cockatoos are not just naturalised inhabitants of the urban ecosystem, but have also become entangled in the complex social, personal, political, and economic lives of people. If Sydney's cockatoos were once largely invisible in dominant narratives, or regarded as beings out of place, the Wingtags Project has given the lives of these birds' new visibility, legibility, and legitimacy (cf. Star and Strauss, 1999). But, in some neighbourhoods and apartment complexes, cockatoos have become highly charged presences in interpersonal conflicts amongst people. One woman who we interviewed told us about the 'fun police' who monitor other residents in her apartment complex.<sup>2</sup> Two women involved in the homeowners' association corporate board, she said, were really 'anti-bird'. She explained: 'people get upset in my building when I feed some of the birds and the crumbs fall down.' People who were renting in the same apartment complex were nearly evicted by the 'fun police' for feeding the birds.

Living with cockatoos involves negotiating relationships with individual birds, and also, a mindfulness of how these contacts are situated in broader social and micropolitical dynamics. The woman who told us about the 'fun police' said that she has to be extremely careful:

There are people who feed birds and people who don't and we are all very cautious. I stand back and make sure no one sees me doing it [feeding]. And if people say there are a lot of birds on your balcony ... I say there are flowers here. They like flowers.

This woman's balcony, and other backyards around Sydney, have become contact zones, where 'who is in the world is at stake' (Haraway, 2008: 244). Real dangers are present for all involved. People run the risk of being evicted, while the birds risk being killed. There are many cases of wildlife poisonings in Australian cities that targeted birds being fed by other people. Neighbours have used poison to take out their frustration over 'excessive' bird noise and mess, or even over unrelated grievances (van Dooren, 2018).

While we did not interview the 'fun police,' or others who disapproved of intimate avian encounters, rich ethnographic descriptions of people who are afraid of pigeons offer insights into conflicts with urban birds. Hoon Song uses his own fear of the cold flinty beaks and "sewed-in button eyes" of pigeons, as a means of understanding the 'terrifying vortex' that can emerge in encounters with wild bird flocks. Song described his fear of avian encounters 'uncontrollably spiraling into a mutually invoked eruption of convulsive panic' (2010: 9). If this bird phobia might be characterised as an 'opaque madness' (Song, 2010: 8), more concrete fears about the risks of interspecies encounters have proliferated since the H5N1 avian influenza outbreak in 2003. Celia Lowe chronicled the mass slaughter of birds in Indonesia, as contagious viral agents infected a multitude of living beings – domestic poultry, humans, wild birds, and factory farmed pigs (Lowe, 2010: 625). In Vietnam, Natalie Porter (2013) described how human vulnerability to avian bird flu transformed strategies for living in multispecies communities in the context of knowledge hierarchies, village economies, and heterogeneous moral codes.

To date, there have been no reports of H5N1 avian influenza, or any other viruses that can jump from birds to humans, in Australia. People face few epidemiological risks during wild avian encounters in Sydney – as long as one takes care to avoid exposure to birds or their droppings. Bird poop on one's hands, or balcony, can be safely washed off with soap. Participants in our study also expressed concerns that birds might be vulnerable to diseases from human pets, or avian diseases from other wild species at sites of concentrated feeding. However, no such instances have been reported in Australia (Jones, 2018). Regardless, epidemiologists recommend that feeding areas be washed regularly with disinfectant.

Throughout our research, concerns about 'feeding wild birds' came up again and again as a point of controversy and uncertainty. Most people we interviewed confessed, many of them guiltily, that they occasionally feed cockatoos. 'I don't make a habit of it because I don't think that's a good thing to do with wild animals,' said one man. 'But I do occasionally put things out for them.'<sup>3</sup> 'We're a bit naughty 'cause we feed them and that just makes them come even more,' said another.<sup>4</sup> Alongside almost ubiquitous stories about bird feeding, again and again – from the very same people – we encountered the view that one ought not to do so. As Darryl Jones' research has shown, this conflict between ideas and behaviour in Australian wild bird feeding is not at all unique to cockatoos (Jones, 2018). There are numerous ideas about *why* one should not feed birds. In contrast to the United States, where conservation organisations like the Audubon Society promote the use of bird feeders, the dominant view in Australia is that providing food might be bad for birds.

Malnutrition is a common problem for captive pet birds – particularly for cockatoos and other species in the order Psittaciform like cockatiels, lorikeets, parrots, and macaws (Koutsos et al., 2001). Some people distinguished between foods that were purportedly good or bad for the Sulphur-crested Cockatoos, saying: 'The sunflower seed is like chocolate to them... This is like a very big treat, sunflower seed... But no more biscuits.

It is not good for them.'<sup>5</sup> Another woman who routinely feeds Gidgit (062) in Sydney's northern beaches said: 'sometimes we are a little bit naughty and give them bread if we run out of sunflower seeds.'<sup>4</sup> Little is known about the foraging ecology and nutritional requirements of cockatoos – aside from food preference experiments in aviaries. One study kept eight subspecies of cockatoos (including Sulphur-crested Cockatoos) in captivity over several years: 'During this time they were maintained solely on a diet of sunflower seed and despite reports in the literature warning that this staple leads to obesity and ill health, all our birds maintained good health and several bred repeatedly' (Rowley et al., 1989: 19). Even still, in the absence of clear evidence, many cockatoo enthusiasts we interviewed worried that their food provided poor nourishment. Others, as a point of pride, talked about the premium birdseed mixes that they had purchased for the cockatoos. Alongside concerns about how food might influence the health and wellbeing of birds, many participants expressed concerns that feeding might promote dependence on people.

Concerns about undermining cockatoo 'wildness' were aired by many people who regularly feed cockatoos. This sentiment is captured in the New South Wales National Parks and Wildlife Service guidelines for 'Keeping wildlife wild.' Many of our interlocutors were nonetheless conscious of the complexities wiggling within the ideas of 'nature' and the 'wild' that so often structure thought and action during urban encounters with other animals. Western dualisms have tended to frame the world with hard borders: 'You are either in the human fold or you are out in the wild,' writes Anna Tsing. In spite of this imagined division and efforts to police this boundary, most species 'on both sides of the line – including humans – live in complex relations of dependency and interdependence' (Tsing, 2012: 144). One woman told us that the way that we talk about cockatoos in urban environments is inherently complicated and involves seemingly contradictory terms: 'I'd say that they stay wild, *and* become tame... They are tame, but they are not dependent.'<sup>6</sup> Another man said: 'they're friendly but they're wild... they are like close friends, instead of pets.'<sup>7</sup> Most participants wanted the cockatoos to remain 'wild,' but with a caveat: they wanted to hold onto cherished social interactions (cf. Collard, 2014).

Magnus Fiskesjö suggests that understanding animals as 'neighbours,' rather than 'friends,' is more appropriate in situations where there is mutual awareness, recognition, but distance. Many neighbourly relationships involve 'mutual recognition of each other's right to an independent existence, one alongside the other, including the right to be left alone by the other' (2017: 223). But, we found that spatial proximity, rather than distance, characterised many relationships between people and cockatoos in Sydney. In using the idiom of friendship to characterise these encounters, our informants were mindful of a desire for continued social interaction. In many cases, people seem to have initiated feeding relationships with a desire to cultivate long-term social relationships with members of other species – saying that they wanted to spend more time in close proximity to cockatoos and other birds, or wanted to help wildlife persist in the urban landscape. In other cases, however, people have been thrust into social relationships with some strong prompting from the cockatoos themselves. One man living near Sydney's Centennial Parklands said:

I bought the house nineteen years ago and when we moved in the house there was a big bag of sunflower seed. Out on the balcony there was a big metal basin. It was just empty, the house was empty apart from that. The next morning at dawn I found out what was going on when the cockatoos arrived for breakfast. Checking with the neighbours, [I learned that] the cockatoos have been coming to the house twenty years prior to me moving in. So they have been coming to the house almost 40 years.<sup>8</sup>

In this particular site of encounter, which was co-produced and sustained over time by different birds and people, the cockatoos remained wild in the sense that they retained their capacity for freedom and bodily flight (cf. Collard, 2014: 154). As with all of the other situations we observed, the birds remained free to form their own social relationships without reference to humans. Feeding cockatoos and other Australian birds thus generates opportunities for interacting with *wild life*. Participants in the Cockatoo Wingtag Facebook page have generated convivial spaces where social and ecological networks overlap, spaces where people recognise the autonomy and alterity of cockatoos.

But there is nonetheless a clear tension here between many feeders' desires for closeness with cockatoos – in terms of both physical proximity and intimacy – and their efforts to respect cockatoo autonomy or 'wildness.' Like many conservationists working in close proximity with the animals they are trying to 'save', these feeders are in search of that elusive space of 'absent-presence' (Reinert, 2013: 22) in which they can be with another without (detrimentally) altering them. A similar dynamic is at play in the work of some behavioural biologists, who are interested in studying animals without unduly altering them (Candea, 2013; Fuentes, 2010). Conservationists and behavioural biologists have developed careful - even if thoroughly imperfect - techniques and technologies for this kind of involvement: from the use of radio collars, binoculars, and blinds, to handling protocols and costumes (Benson, 2010; Chrulew, 2017; Tønnessen, 2010; van Dooren, 2016; 41-43). People who feed cockatoos in their backyards do not possess the same repertoires and equipment, and yet they too are able to limit their interactions, to hold back and practice forms of detachment and disengagement (Ginn, 2014). While protecting an endangered species, or producing scientific insight is at stake in biological research, the dealings of urban residents with cockatoos in Sydney are more focused on subjective experiences of delight. And yet, for the individual animals - with fleshy bodies brought into new kinds of proximity with humans – the possible risks and benefits are remarkably similar (Rose et al., 2011).

Conviviality with urban cockatoos unavoidably involves compromises in spaces of 'messy co-presence' (Hinchliffe and Whatmore, 2006), but also life-affirming distances and detachments (Candea, 2010; Fuentes, 2010). Being *con-vivial* (literally, with life) in an urban environment does not simply involve the physical manufacture of sites for interspecies encounters (although changes to infrastructures may well be part of it). Rather, conviviality is an ongoing task of exploring how places are relationally constituted, grounded in the acceptance that urban (and other) areas are 'more-thanhuman' spaces that are shaped by lively multispecies processes, and possibilities for flourishing and abundance (Collard et al., 2015; Lorimer, 2012; Wolch, 2002). If we accept that cities are often inhabited against the grain of urban design, then it requires a conceptual shift from the idea of built environments to a notion of living cities – places where people are no longer considered inimical to nature, nor where nature is antithetical to urban spaces (Davidson and Ridder, 2006; Hinchliffe and Whatmore, 2006).

## **Interspecies Facebook friendships**

While the Wingtags Project provided us with access to a community of cockatoo enthusiasts and a rich online archive of their ideas and opinions on strategies for living with wild cockatoos, we found ourselves becoming particularly fascinated by the way in which the wingtags were also enabling new kinds of human/cockatoo relationships as well as modes of sociality amongst people. These modest yellow tags, we found, opened up new possibilities for interaction between people and birds. In our interviews with cockatoo enthusiasts and our conversations, we kept returning to the notion of 'friendship'.

Philosopher Dominique Lestel provides an important theoretical foundation for understanding interspecies friendships. The 'preferential attachment' that develops during friendships, according to Lestel, involves sharing time and space in a way that allows for the 'coordination of actions and activities.' As he notes: 'Friendship cannot be fleeting. It is necessarily part of duration (*durée*). And it takes place necessarily in duration' (Lestel, 2007, trans Jeffrey Bussolini). Unlike a 'relationship' with a machine that can be abandoned for a time and then taken up again when needed, friendship with an animal (human or otherwise) 'requires not only time, but also a certain affection when one has need of it and that it is extremely difficult to neglect even momentarily' (Lestel, 2007, trans Jeffrey Bussolini).

One participant in the Wingtags Project, named Max Jackson, once lived in the Mosman neighbourhood, directly across Sydney Harbour from where the birds were originally tagged.<sup>9</sup> Max developed an ongoing relationship with a whole flock of cockatoos that became difficult to neglect even for a single day. The cockatoos woke him up in the mornings, and the timing of their visits kept getting earlier: 'It used to be about 7:00am but it crept further and further to 6:30am.' The flock became insistent, routinely soliciting attention.

"Every morning a couple of birds arrive at my window, and tap on the glass to wake me up. If I don't wake up they usually fly away and come back later. But the second they see me move they just go nuts and they start banging and they all come down."

Many of the birds in this flock were tagged: 'most mornings I will see Charles [049], The Wig [088], Hazel [015], and Mr. Squiggle [016],' Max added. But, amidst all of these regulars he developed a special relationship, a friendship, with 077 – a bird he addressed by number, not by its official name on the Wingtags Project website: Doepel. 'To be honest what really stands out is the repeated loyalty of 077,' Max said. 'Because I have a friend who's an animal.'

Wild birds retain their capacity to approach and withdraw from people who feed them. Relationships with wildlife are structured by different ethical affordances and material circumstances when compared with the relationships that develop with animals in captivity, including pets (cf. Shir-Vertesh, 2012; Warkentin, 2011). According to Lestel, the material dimensions of friendship are multiple and diverse. They are also essential to understanding what is possible and at stake in any given friendship: 'a reflection on friendship between species must be grounded in the material dimensions that render it possible and permit it to last' (Lestel, 2014). Interspecies relationships often depend on the capacity of both parties to communicate their intentions in legible ways. They also rely on the ability to reliably identify another individual, again and again. As Lestel notes: 'Whoever seeks the friendship of an animal identifies it personally' (2007, trans Jeffrey Bussolini). In the case of Max's friendship with an individual cockatoo, number 077, it was the wingtag that made such identifications possible. Speculating across the species interface, we ask: can shared understandings and emotional resonances emerge in such friendships?

Sometimes 077 seemed to get 'upset,' just 'perching nearby watching the other birds eating his seeds,' Max reported. 'I don't know if I'm projecting human qualities onto a bird, but I feel like he can't stand these other birds that are encroaching on his friendship.' As dominant birds in the flock tried to monopolise the food, 077 began moving closer to Max. He said that 077 gradually began perching on his arm when other birds were around. Subsequently, 'after everyone leaves he comes back and he flies around to my window and taps on the glass to get a little private feeding session.' For personal reasons, Max has since moved away from Mosman, and given up his daily interactions with this cockatoo flock. While he has not been

following his feathered friends on the Cockatoo Wingtag Facebook page, he fondly remembers these daily interactions. In an e-mail he wrote: 'I myself still can't decide whether or not they're just in it for the food. Because these animals appear to be very social and intelligent, it leaves me guessing.'

In making this observation, Max raises a question that frequently troubles discussions of human/animal friendships: what is it that motivates animals to participate? At the heart of this question seems to very often lie the common-sense notion that in order for a relationship to be a genuine friendship, both parties must be invested and interested in something other than an 'exclusively utilitarian' way, as Dominique Lestel puts it (2014: 135). In the case of human/cockatoo relationships, like the one described by Max, this situation is far from clear. Wild cockatoos often get food out of their relationships with people. But, they may have other motivations as well. Max reports that '077 and a few others did sometimes hang around with us at the outside dinner table, once all food had been consumed.' And what about the people? Are their motivations, many of which centre on the feelings of enjoyment and pleasure that avian visitors provide, 'utilitarian' or not? Hard lines between these kinds of motivations are notoriously difficult to draw. Relationships are almost always much more complex spaces of diverse interests in and benefits to both self and other (Plumwood, 1993: 143, 2002: 34).

Even more fundamentally than the question of motivations, we might ask to what extent these relationships are even a matter of *mutual* attachment? Certainly cockatoos predictably arrive at places where food is routinely on offer, but do they seek out individual humans? Could we explain the daily visits of cockatoo flocks to Max's window, as an example of simple time-place learning (Wilkie, 1995), a commonly reported animal behaviour, with no need to elaborate theories of friendship and social interaction? At the very least, there is evidence that some birds are *able* to recognise individual people. Wild crows (Corvus brachyrhynchos) in the United States show lasting recognition of people who threaten them (Marzluff et al., 2010). Some cockatoos tagged in this study, like Lily (057) who has returned to the same tree hollow overlooking the harbour every year for the past five years to nest, occasionally lets out a squawking alarm call when she sees one of us (John Martin) who initially captured her and tagged her wings. At times she seems to have this capacity to recognise John even when he is wearing sunglasses and a hat. Although some birds, like Lily, may hold onto lingering feelings of acrimony towards their captors, the original study found 'no adverse effects, such as shunning from the flock, increased predation or damage to the wing' as a result of tagging (Davis et al., 2017: 3).

Cockatoos, it seems, do not require tags to identify people. But, are these birds selective with their human friendships? The same bird that liked to visit Max for private feeding sessions, 077, was spotted on Clemence King's balcony in August 2017 along 'with a few other cockies destroying our fern tree' an activity which seemed to give them 'great pleasure!' Clemence has only seen 077 a couple of times, but the encounter stood out since the bird sat on her arm and 'let us pat him quite a bit.' Birds that are friendly can become nuisances. Clemence used to feed the cockatoos – The Wig (088), Party Boy (027), and other unmarked birds were regulars – but she stopped when the cockatoos started biting chunks out of her wooden window frames, succulent plants, and tree ferns. She still feeds rainbow lorikeets, small colourful birds that like nectar. But, Clemence claims: 'the cockatoos get jealous – they don't like nectar. They want food and they spill the bowl.'

Many birds in the Wingtags Project seem to be promiscuous with their human friendships – like social butterflies. Facebook has enabled people who participate in the study to follow the exploits of their avian friends in other people's households: 'Coco (030) is a regular everywhere. I noticed in Facebook that people see Coco all over this area... He's a very

sociable bird, he lands on people's verandas.<sup>10</sup> One of 030's other associates reports that while this cockatoo is very friendly to people, she was once shy with other birds: 'Coco used to sort of be a fringe-dweller in the local flock, but [now] he's gotten in the thick of it, [and] is now a member.<sup>11</sup> Some birds, like Columbus (001), seem to be highly charismatic and bring 'energy to shared spaces' (Ahmed, 2010: 43). This charisma is, as Jamie Lorimer notes, not simply an intrinsic feature of a species or an individual, but a far more relational and emergent phenomenon (2007). The charisma of birds like Coco and 077 (Doepel) has formed through a particular technological infrastructure which enables individual identification, the formation of actual relationships, and legions of 'followers.' People around the globe actively engage from a distance with the Cockatoo Wingtag Facebook page. Via Facebook, and other social media platforms, these charismatic birds have developed a following that extends beyond the realm of people who actually engage in copresent interactions with them in the world (Gershon, 2011: 874).

Relationships between cockatoos and their human friends are drawn into some of the many problems and promises of life in an age of social media, an age in which people are making 'promiscuous alliances' with others and learning how to distinguish between 'actual friends, merely Facebook friends, and/or objects of desire' (Gershon, 2011: 874). However, social media also carries the risk of unwanted surveillance (cf. Star and Strauss, 1999: 10). Third parties might use information in unintended ways, as the woman who told us about the 'fun police' explained when she noted that she had to be careful about sharing her bird feeding behaviours on Facebook. Social media is thus extending the capabilities of hostile parties to monitor and disrupt relationships – amongst multiple species or in strictly human realms. Facebook enables 'you to know that there may be risk in your relationships,' notes Iiana Gershon, when one voyeuristically glimpses the social interactions of lovers and friends. But, with this social media platform she concludes that there is 'never enough insight to know another's exact intentions or desires' (2011: 888).

The Cockatoo Wingtag Facebook page is full of lively speculation by members of the public about the intentions and desires of individual birds. People can now learn from a distance about their favourite cockatoos: their likes and dislikes, their travels, their other friendships with humans and birds. Getting to know others in this way might sometimes enable a relationship to run more smoothly. The Cockatoo Wingtag Facebook page also mediates encounters between science and society. John Martin regularly posts his observations – ranging from quirks of individual birds that are left-handed, to more serious matters like signs of the potentially fatal beak and feather disease. John also reposts videos from members of the public that illustrate nuanced facets of the birds' social lives and ecological communities. An ethics of conviviality is being worked out in this virtual space, where an unruly public engages in active and open-ended debate about the possibilities flourishing with other species in a human dominated environment (cf. van Dooren and Rose, 2012).

## **Becoming a flock**

On a sunny winter day in 2015, we brought insights from our interviews with enthusiastic participants in the Cockatoo Wingtag Facebook page back to the place where the birds were originally tagged: the Royal Botanic Garden, near Sydney's iconic Opera House and right next to the skyscrapers of the Central Business District (CBD). We conducted a methodological experiment – working with the students in our Environmental Humanities Capstone Course to make sense of wild forms of life in this urban garden. Pens, paper, audio recorders and smartphones were ready. Heads cast skyward. While the students learned

techniques for conducting interviews and taking field notes for their final independent projects, we learned with them – experimenting with tactics and techniques for studying flocks, or modelling methods after the object of our research.

While students had dispersed out into the city to conduct their own interviews for earlier components of this project, we now reassembled our flock. This field trip was an opportunity for students to learn basic ethological methods for studying animal behaviour. Turning their attention directly to the cockatoos that they had been studying via human informants throughout the previous months, we sought to study not only the abstract form of the flock but the actual animals themselves (cf. Kosek, 2010). Doing so is part of an insistence that creatures who have long been relegated to the margins of our disciplines, 'as part of the landscape, as food for humans, as symbols' (Kirksey and Helmreich, 2010: 545), should be attended to more closely – both for their own sakes, and for the consequential ways in which their differences come to matter in our shared worlds (van Dooren, 2016). While making direct observations of animal behaviour, we also asked: How might a flock of humans study a gregarious, flocking, animal like the cockatoo? What differences might our flocks make to each other when they meet?

The cockatoos were resting in the branches of tall eucalyptus trees, and appeared indifferent as we arrived on the scene, documenting their every move. One of us, John Martin – the wildlife biologist who had tagged the birds – led the tour. A cockatoo suddenly made a loud alarm call – spreading his wings, making a display, and raising the bright yellow crest on the top of his head. John speculated that the alarm call was directed at him, based on similar reactions on other occasions. As noted above, some of the birds appear to recognise John. By the time we had oriented the students – going through a list of standard cockatoo behaviours, or an ethogram – the particular bird who sounded an alarm called upon our arrival had lost interest and had flown off to another part of the botanic garden.

During much of this research field trip, cockatoos moved around individually or in groups – not actively flocking together. Students were tasked with observing, and discretely following, groups of birds through the botanic garden. Who were they interacting with? What were they eating? What might this movement – a raised crest or a loud call – mean? Students were not required to have all of the answers. They were simply asked to pay close attention, to keep notes, and to begin to think about what behaviours reveal, or fail to: what can we really know about the lives and worlds of these social animals?

During this time the birds observed their human observers from a polite distance, not engaging in direct social interactions with us. Birds and people were detached, or disengaged – with a 'mutual suspension of action', perhaps even waiting for something to happen in relationships of 'inter-patience' (Candea, 2010: 249). Activities veered off in multiple directions, as birds groomed themselves and foraged alone. On a few noticeable occasions, however, the pitched intensity of interactions amongst birds and people redoubled. Avian flocks began to form around potential bonanzas of human food.

The Royal Botanic Garden is frequented by picnickers who bring choice foods with them into the park. As we fanned out into the botanic garden in small groups, we found multispecies foraging flocks where cockatoos competed with other birds for food. White Ibis (*Threskiornis molucca*), Australian Raven's (*Corvus coronoides*), Common Pigeons, (*Columba livia*), and Silver Gull's (*Larus novaehollandiae*) lurked around tables at the botanic garden cafe and around picnic sites, where they engaged in opportunistic food theft – swooping in to grab chips off of plates and waiting for morsels to be dropped on the ground. Sometimes these thefts produced aggressive 'gifts' from the humans. After an ibis invaded a picnic, touching some hamburger buns with its long beak, the picnickers began hurling food at the birds. Food was redistributed as the birds tussled with one

another over larger bits, many seizing the opportunity to quickly depart from the flock with a choice chunk of food on their own line of flight. Despite ubiquitous signs – '*Please* do not feed the birds, they can bite' – a girl was intent on giving bread to ducks. As two boys started feeding gulls a swarm emerged, with multiple kinds of birds jostling against each other. Another boy ran past, chasing birds, asking if they wanted a cuddle. An affective buzz emerged with close inter-corporeal encounters, as differently embodied animals came together, with a sense of heightened excitement and heightened risk (cf. Kirksey, 2015; Moore and Kosut, 2013; Parrenas, 2012).

Deleuze and Guattari salute 'affect animals' that gather together to form packs and swarms, which they characterise as 'a multiplicity without the unity of an ancestor' (1987: 241). While swarming has been celebrated as a form of radical politics by the likes of Hardt and Negri (2004), Eugene Thacker notes that the figure of the swarm has generated mutations in the body politic that are 'structurally innovative but politically ambivalent' (2004). While Pentagon strategists appropriated the tactics of swarming in the War on Terror, Jake Kosek notes that swarms of actual honey bees are 'often gentle, sometimes confused' (2010: 652). Departing from these critical studies of insect collective action, we studied flocks of birds as models of and models for fleeting forms of association and collaboration. Sticking with our focal species we began following the distinctive calls of the cockatoos – 'raaah, raaaah, rah, raaaah' – throughout the botanic garden.

Towards the end of our field trip, we met up with a group of cockatoos near an entry gate to the Royal Botanic Garden. One of our students produced a small piece of her own sandwich as an offering to a cockatoo – an invitation to participate in an encounter. The sandwich caused the scene to change rapidly, as the student recalled in her field notebook:

There was a flurry of movement and wings and I could suddenly feel claws on my arms and shoulder. Another flurry and there was a bird in my hair!... For such big birds with long talons and strong beaks, they were very gentle. As I overcame the shock of so many birds flying toward me at once, I felt quite excited.

As a sandwich emerged from a bag, a flock of cockatoos descended. But, they did not just go for the sandwich, or even the sandwich holder. In our subsequent discussions of the event, the thing that stood out most to all of us was the way in which everyone – cockatoo and human – was caught up in the action. We flocked together. The sandwich it seems was taken as a *general* invitation; as Lestel (2007) would put it, a 'mediation' indicating that approach was appropriate. It implied not only that we had food, but that we were interested in interaction (see Figures 3 and 4). Their flock recognised and engaged our flock, enlisting us in a situation where questions we had sought to understand in interviews – related to wildness, risk, and reward in multispecies relationships – suddenly took on new meanings.

A classic study of 'Flocking Behaviour in Birds,' by John Emlen (1952) reports that these spectacular phenomena may emerge 'from a convergence of independent individuals at a common, localized source of attraction such as a patch of shade or a feeding station.' Emlen notes that flocks might also 'arise as a result of a mutual attraction between individuals' (1952: 160). As affect redoubled with pitched intensity during close encounters, the feelings of interspecies attraction that produced this gregarious encounter quickly alternated with surprises and (for some) uncomfortable experiences, as cockatoos began landing on many of our shoulders and heads (cf. Kirksey, 2015: 121). While none of us harbour any particular phobias of birds, some of us experienced trepidation as we anticipated the 'scene of commotion that might transpire in our encounter' (Song, 2010: 14).

While early theorists of flocks assumed that they were 'aggregations of homogenous individuals' (Emlen, 1952: 160), we found that a heterogeneous multispecies assemblage



**Figure 3.** Feelings of excitement alternated with unease as cockatoos mobbed the student who offered the sandwich. Photographs by Kate Tuckson.



**Figure 4.** Feelings of those of us who did not have any food on offer. Passerby smiled as they took pictures with their phones and momentarily took part in the emergent flock. Photographs by Kate Tuckson.

formed a larger and looser flock (cf. Harrison et al., 1991). Tourists joined in, filming us filming the birds. Noisy Miner's (*Manorina melanocephala*), ibis, and pigeons emerged around the edges. The flock gathered together a buzz of reverberating affect generated through multispecies intra-actions (cf. Barad, 2014; Moore and Kosut, 2013). After the sandwich had been consumed and this momentary excitement dissipated, the cockatoos did not withdraw. Instead, they continued to move around amongst us – on the ground and on our shoulders and heads – as humans and birds collectively settled into quieter and calmer social interactions.

We had been drawn into the kind of proximity that enables intimate encounters, but that also holds the seeds of significant dangers. A flock, like a friendship, is not uniformly good or pleasant for all who are involved. The dangers for the cockatoos are obvious: a human who strikes out, in anger or fear, could easily kill a cockatoo, or at the very least break a wing, which for a free-living bird is much the same thing. But for our group of human researchers too, even if less visibly, there were real dangers – at least of serious bodily harm. As cockatoo claws sank into our backs and arms, we felt this. But the birds clearly did not intend harm. As someone sat on the ground, a cockatoo tongue, he felt the bird begin to gently nibble the edges of his earlobe. A beak that can easily crack the thick shells of nuts was gently deployed for what seemed to be a more exploratory and intimate purpose. Had the bird become startled, or simply curious, and bitten down, there is no doubt that it could have removed a large chunk of flesh. But this did not happen. After a minute of gentle exploration, the bird hopped down onto the ground and moved on. The sandwich long gone, the interaction had become something else entirely: an opportunity to get to know interesting others, a site for carefully testing the boundaries of interspecies etiquette (cf. Candea, 2010; Fuentes, 2010; Warkentin, 2010).

But then, almost as quickly as it began, the encounter was over. Comparing our fieldnotes, we later determined that at approximately 2:15 p.m. a dog approached – walked by its owner on a leash. The cockatoos did not initially notice, but after a Noisy Miner spotted the dog – and made a species-specific 'alarm call' – the avian members of the multispecies flock suddenly took flight in a collective startle response.

Flocks are fleeting forms of affiliation and association. Flocks involve collective trust and shared practices of vigilance for potential predators (Harrison et al., 1991). These forms of association also involve shared spaces of risk and vulnerability (cf. Kirksey, 2015: 114–123). The experience of joining a flock, as participants and observers, led the student with sandwich to write in her descriptive fieldnotes: 'I took the risk of putting out food and they took the risk of accepting and coming close enough to us that we could harm each other easily. Relationships take risk and trust, so I felt I've started my first multi-species relationship with a cockatoo.' Perhaps not yet a friendship, but a tantalising initial encounter with another species and a momentary opening to social encounter.

In this short, intense, encounter between flocks, our visit to the Royal Botanic Garden became something of a microcosm for many of the central issues in human/cockatoo relationships that our earlier interviews had exposed. Rather than corrupting wild birds, and making them tame, we found multispecies flocks were fleeting associations where wild and unruly behaviours redoubled as people offered up food. We learned that wildness – far from simply being about the imposition of a division between domains of nature and culture – can emerge in intimate encounters with other species where risks intensify in close bodily encounters. Together we considered questions related to vulnerability, shared but always unequal risk, and possibilities for forming new and uncertain relationships grounded in imperfect modes of understanding and attending to each other (cf. Parreñas, 2012). Importantly, we were all exposed to the kind of proximity and direct interaction with cockatoos that led many of the people who we interviewed to celebrate the enchanting character of these charismatic beings (Lorimer, 2009: 915). Through direct encounters with a flock, we developed a new kind of understanding: an understanding of humans, of cockatoos, but also of the kinds of relationships that might be possible between them.

## Conclusion

This article is an experiment in multispecies methods, in thinking with and as a flock. In doing so, we utilised the existing scientific infrastructure of the Wingtags Project to explore possibilities for multispecies research and teaching. Rather than simply celebrate flocking as a novel method of collaborative research, we used it to consider issues of conviviality and conflict, and probe the possibilities of interspecies friendship. We deployed flocking as a research tactic as we spread out into the city to conduct interviews and observations, and then came together to generate shared understandings and ideas. We studied embodied practices of feeding wildlife – attending to asymmetrical vulnerabilities and risks during corporeal interactions (cf. Kirksey, 2015; Warkentin, 2012). We studied situations where animals were becoming wild together – with birds, people who regularly feed them, tourists, and other interloping species participating in encounters that were potentially dangerous,

risky, and out of control (cf. Franklin, 2003). Recognising the autonomy and alterity of other species as we interacted with *wild* life, we found that ongoing social and ecological interactions were key to shared multispecies futures (cf. Collard, 2014: 154).

While living within cities built primarily with the well-being of humans in mind, some people are working to generate inclusive multispecies spaces. Sydney residents are experimenting with tactics for creating 'more-than-human' places, where fleeting encounters with flocks of birds might open opportunities for interacting with other species in the built environment (Lorimer, 2012; Wolch, 2002). Cockatoos are learning to live with humans and other animals in the city – navigating contact zones where responses are improvised amidst emergent opportunities and risks (cf. Haraway, 2008; Pratt, 1992). The multitude of people who feed cockatoos, and other wildlife, are practicing an ethics of inclusivity and convivality (van Dooren and Rose, 2012). Sydney residents are offering cockatoos links to human social worlds, and food from industrial supply chains, while always giving the birds the opportunity to escape (cf. Collard, 2014).

Cockatoos readily respond to human norms about sociality – our desires for interaction. communication, and sometimes touch. While personable birds like cockatoos easily capture our attention, working towards genuinely inclusive multispecies cities also involves sustained attention to unloved others, many of whom 'are less visible, less beautiful, less a part of our cultural lives' (Rose and van Dooren, 2011: 1). As cockatoos have increased in abundance in Sydney – along with other colourful and social birds like the Australian King-parrot (Alisterus scapularis), the Rainbow Lorikeet (Trichoglossus moluccanus), and the Crimson Rosella (*Platycercus elegans*) – many other birds have experienced dramatic declines (Major, 2010: 236). White settler colonialism has resulted in the destruction of nearly 40% of Australia's forests, with high fragmentation of the remaining native vegetation (Bradshaw, 2012). Bird species that were once relatively abundant in forested environs, like the Scarlet Honeyeater (Myzomela sanguinolenta), Ground Parrot (Pezoporus wallicus), Brown Falcon (Falco berigora), and Whistling Kite (Haliastur sphenurus) have not found homes in Sydney (Keast, 1995; Major, 2010: 236). As dominant political and economic forces displace forms of wild life from previously stable habitats (Collard, 2014), it is increasingly important to understand how differently situated human systems of knowing, recognising, and valuing generate relational forms of charisma around some animals (Lorimer, 2012). At the same time these cultural systems generate abject subjects as many urban animals are disregarded, vilified, and actively targeted for death (cf. Rose and van Dooren, 2011).

As conservation work becomes increasingly participatory, and mediated by digital platforms, scholars in the Environmental Humanities, Human Geography, Animal Studies, and allied fields have critical articulation work to do (cf. Clifford, 2001; Laclau and Mouffe, 1985). Articulating 'contingent, and non-necessary, connections' between different aesthetic, ethical, and ecological systems (cf. Hall and Grossberg, 1986: 53) can expand our circle of virtual friends in multispecies worlds. The risk of speaking on behalf of friends in ways that betray their interests – the risk of irresponsible ventriloquism – is ever present in realms of representation where animals cannot 'talk back' with critical corrective interventions (Kirksey, 2014: 3; cf. Latour, 2004). As mediated virtual encounters with other species attune people to the arts of noticing others in multispecies worlds (cf. Tsing, 2015), actual friendships with wild animals are opening up opportunities to develop responsible ways of knowing others. As differently embodied animals come together in close inter-corporeal encounters, wild spaces of conviviality are emerging in multispecies cities where improvisation, risk, and accountability are all in play.

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#### Notes

- 1. http://cockatoo.wingtags.com/
- 2. Interview by Erin Olejniczak.
- 3. Interview by Amy Ow.
- 4. Interview by Kate Tuckson
- 5. Interview by Jeffrey Kwok.
- 6. Interview by Sarah Sannen.
- 7. Interview by Ken Lau.
- 8. Interview by Stephanie Newson.
- 9. Interview by Daniel Emery.
- 10. Interview by Anne Maree Kreller.
- 11. Interview by Kaleesha Morris.

#### References

Ahmed S (2010) The Promise of Happiness. Durham, NC: Duke University Press.

- Barad K (2014) Invertebrate visions: Diffractions of the brittlestar. In: Kirksey E (ed.) *The Multispecies Salon*. Durham, NC: Duke University Press, pp. 221–241.
- Benson E (2010) *Wired wilderness: Technologies of tracking and the making of modern wildlife.* The Johns Hopkins University Press.
- Bradshaw CJA (2012) Little left to lose: Deforestation and forest degradation in Australia since European colonization. *Journal of Plant Ecology* 5: 109–120.
- Caley G (1966) Reflections on the Colony of New South Wales. Melbourne: Lansdowne Press.
- Candea M (2010) 'I Fell in Love with Carlos the Meerkat': Engagement and detachment in humananimal relations. *American Ethnologist* 37: 241–258.
- Candea M (2013) Habituating Meerkats and redescribing animal behaviour science. *Theory, Culture & Society* 30(7–8): 105–128.
- Canguilhem G (1991) Machine and organism. In: Cohen M and Cherry R (eds) *Incorporations*. New York, NY: Zone Books, pp. 44–69.
- Choy T, Faier L, Hathaway MJ, et al. (2009) A new form of collaboration in cultural anthropology: Matsutake worlds. *American Ethnologist* 36: 380–403.

- Chrulew M (2017) Saving the golden lion tamarin. In: Rose DB, van Dooren T and Chrulew M (eds) *Extinction Studies: Stories of Time, Death and Generations*. New York, NY: Columbia University Press.
- Clifford J (2001) Indigenous articulations. The Contemporary Pacific 13: 468-490.
- Collard R-C (2014) Putting animals back together, taking commodities apart. Annals of the Association of American Geographers 104: 151–165.
- Collard R-C, Dempsey J and Sundberg J (2015) A manifesto for abundant futures. *Annals of the Association of American Geographers* 105: 322–330.
- Crist E (1999) Images of Animals. Philadelphia, PA: Temple University Press.
- Davis A, Major RE, Taylor CE, et al. (2017) Novel tracking and reporting methods for studying large birds in urban landscapes. *Wildlife Biology* 1–8. DOI: 10.2981/wlb.00307.
- Davison A and Ridder B (2006) Turbulent times for urban nature: Conserving and re-inventing nature in Australian cities. *Australian Zoologist* 33: 306–314.
- Deleuze G and Guattari F (1987) A Thousand Plateaus: Capitalism and Schizophrenia. London: Athlone Press.
- Emlen JT (1952) Flocking behavior in birds. The Auk 69: 160-170.
- Fiskesjö M (2017) China's animal neighbours. In: Saxer M and Zhang J (eds) *The Art of Neighbouring*. Amsterdam: Amsterdam University Press, pp. 223–236.
- Franklin S (2003) Ethical biocapital. In: Franklin S and Lock M (eds) Remaking Life and Death: Toward an Anthropology of the Biosciences. Santa Fe, NM: School of American Research Press, pp. 97–128.
- Fuentes A (2010) Natural cultural encounters in Bali: Monkeys, temples, tourists, and ethnoprimatology. *Cultural Anthropology* 25: 600–624.
- GershonI (2011) Un-friend my heart: Facebook, promiscuity, and heartbreak in a neoliberal age. *Anthropological Quarterly* 84: 865–894.
- Ginn F (2014) Sticky lives: Slugs, detachment and more-than-human ethics in the garden. *Transactions* of the Institute of British Geographers 39: 532–544.
- Hall S and Grossberg L (1986) On postmodernism and articulation: An interview with Stuart Hall. *Journal of Communication Inquiry* 10: 45–60.
- Hanney R (2017) Cockatoo cull?, October 21, 2010. Available from: http://www.altmedia.net.au/ cockatoo-cull/26100 (accessed 31 August 2018).
- Haraway D (2008) When Species Meet. Minneapolis: University of Minnesota Press.
- Hardt M and Negri A (2004) *Multitude: War and Democracy in the Age of Empire.* New York, NY: The Penguin Press.
- Hinchliffe S and Whatmore S (2006) Living cities: Towards a politics of conviviality. *Science as Culture* 15: 123–138.
- Jones D (2018) The Birds at My Table: Why We Feed Wild Birds and Why It Matters. Ithaca, NY: Cornell University Press.
- Jordan N (2011) *Potts Point Cockatoos may be given a Shock, Not the Chop.* Altmedia. August 18, 2011. Available from: http://www.altmedia.net.au/40371/40371 (accessed 31 August 2018).
- Keast A (1995) Habitat loss and species loss: The birds of Sydney 50 years ago and now. *Australian Zoologist* 30: 3–25.
- Kirksey E (2014) The Multispecies Salon. Durham, NC: Duke University Press.
- Kirksey E (2015) Emergent Ecologies. Durham, NC: Duke University Press.
- Kirksey E and Helmreich S (2010) The emergence of multispecies ethnography. *Cultural Anthropology* 25: 545–576.
- Kosek J (2010) Ecologies of empire: On the new uses of the honeybee. *Cultural Anthropology* 25: 650–678.
- Koutsos EA, Matson KD and Klasing KC (2001) Nutrition of birds in the order psittaciformes: A review. *Journal of Avian Medicine and Surgery* 15: 257–275.
- Laclau E and Mouffe C (1985) *Hegemony and Socialist Strategy: Towards a Radical Democratic Politics*. London: Verso.
- Latour B (2004) Politics of Nature. Cambridge, MA: Harvard University Press.

Lestel D (2007) Les Amis de Mes Amis. Paris: Couleur Idees.

- Lestel D (2014) The friends of my friends. Angelaki 19: 133-147.
- Lorimer J (2007) Nonhuman charisma. Environment and Planning D: Society and Space 25: 911-932.
- Lorimer J (2012) Multinatural geographies for the anthropocene. *Progress in Human Geography* 36: 593–612. https://doi.org/10.1177/0309132511435352.
- Lowe C (2010) Viral clouds: Becoming H5n1 in Indonesia. Cultural Anthropology 25: 625-649.
- Major RE (2010) Using museum collections and community surveys to monitor change in the birds of Sydney. In: *The Natural History of Sydney*. Forum of the Royal Zoological Society of New South Wales, Royal Zoological Society of New South Wales, pp. 234–240.
- Marzluff JM, Walls J, Cornell HN, et al. (2010) Lasting recognition of threatening people by wild American crows. *Animal Behaviour* 79: 699–707.
- Moore LJ and Kosut M (2013) *Buzz: Tracking Bees through Environments and Cultures*. New York: NYU Press.
- Munro K (2011) Beak hour traffic destroying heritage buildings, 3 September, Sydney Morning Herald.
- Parrenas RS (2012) Producing affect: Transnational volunteerism in a Malaysian orangutan rehabilitation center. *American Ethnologist* 39: 673–687.
- Plumwood V (1993) Feminism and the Mastery of Nature. Opening Out. London / New York, NY: Routledge.
- Plumwood V (2002) Environmental Culture: The Ecological Crisis of Reason. Environmental Philosophies Series. London / New York, NY: Routledge.
- Plumwood V (2009) Nature in the active voice. Australian Humanities Review 113-129.
- Pratt ML (1992) Imperial Eyes: Travel Writing and Transculturation. London: Routledge.
- Reinert H (2013) The care of migrants: Telemetry and the fragile wild. Environmental Humanities 3: 1–24.
- Rose DB (2011) *Wild Dog Dreaming: Love and Extinction*. Charlottesville: University of Virginia Press.
- Rose DB, Cooke S and van Dooren T (2011) Ravens at play. Cultural Studies Review 17: 326-343.
- Rose DB and van Dooren T (2011) Unloved others: Death of the disregarded in the time of extinctions. *Australian Humanities Review* 50.
- Rowley I, Russell E and Palmer M (1989) The food preferences of cockatoos An aviary experiment. *Wildlife Research* 16: 19–32.
- Shir-Vertesh D (2012) 'Flexible Personhood': Loving animals as family members in Israel. *American Anthropologist* 114: 420–432.
- Star SL and Strauss A (1999) Layers of silence, arenas of voice: The ecology of visible and invisible work. *Computer Supported Cooperative Work* 8: 9–30.
- Thacker E (2004) Networks, swarms, multitudes. *CTheory*. Available at: http://www.ctheory.net/ articles.aspx?id=422 (accessed 31 August 2018).
- Tønnessen M (2010) Is a wolf wild as long as it does not know that it is being thoroughly managed? *Humanimalia* 2: 1–8.
- Tsing A (2012) Unruly edges: Mushrooms as companion species. *Environmental Humanities* 1: 141–154.
- van Dooren T (2016) Authentic Crows: Identity, captivity and emergent forms of life. *Theory, Culture and Society* 33: 29–52.
- van Dooren T (2018) Making Worlds with Crows. New York, NY: Columbia University Press.
- van Dooren T and Rose DB (2012) Storied-places in a multispecies city. Humanimalia 3: 1-27.
- Warkentin T (2010) Interspecies etiquette: An ethics of paying attention to animals. *Ethics & the Environment* 15: 101–121.
- Warkentin T (2011a) Etiquette in place: Ethical affordances in Swim-WIth-Dolphins Programs. *Ethics* & the Environment 16: 99–122.
- Warkentin T (2011b) Odd couples, embodied minds, 7 December. Available at: http://sciencestudies. gc.cuny.edu/events/traci-warkentin-odd-couples-embodied-minds/ (accessed 31 August 2018).
- Wilkie DM (1995) Time-place learning. Current Directions in Psychological Science 4: 85-89.
- Wolch J (2002) Anima urbis. Progress in Human Geography 26: 721-742.