

A guide to making sense of animal enemies.

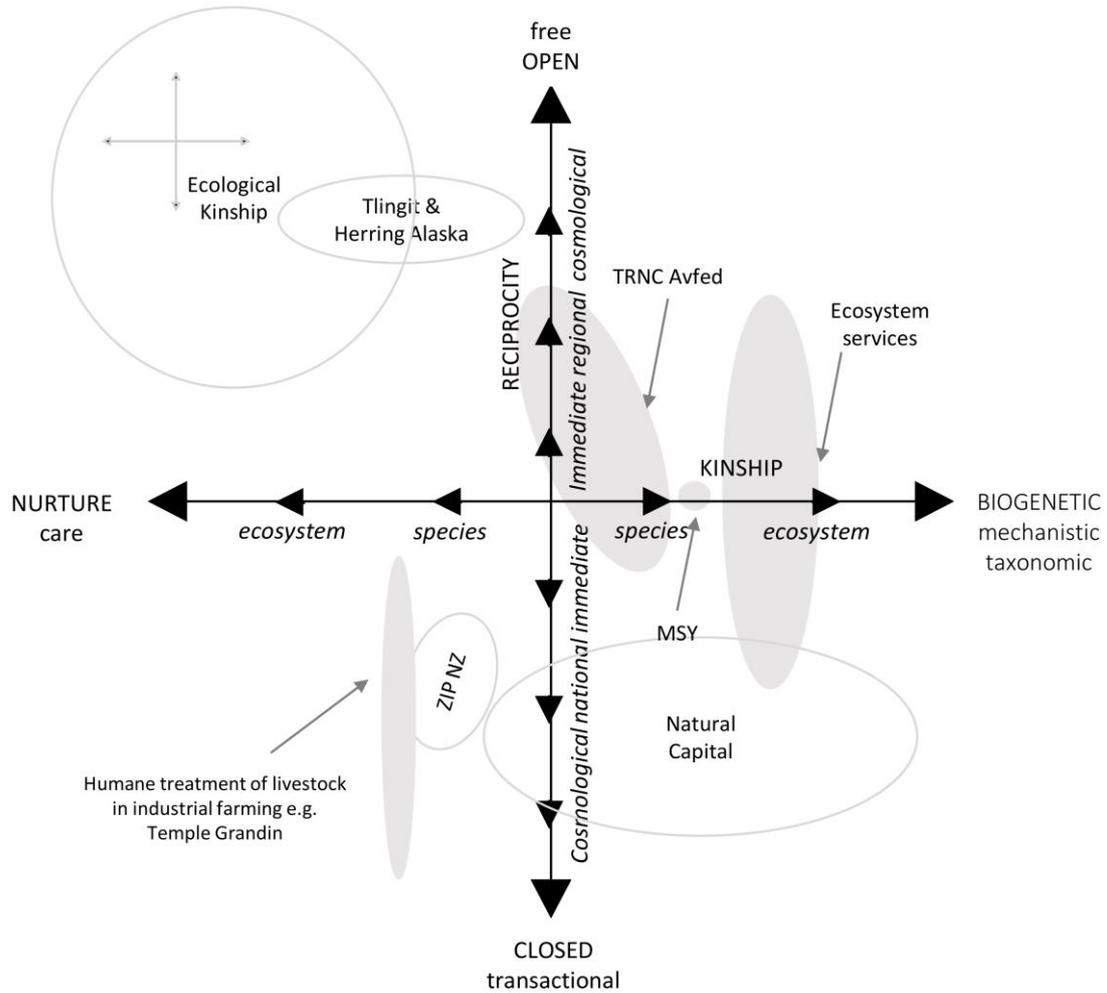


Figure 1. Human-animal relations framework

Abstract

Drawing on the case of game animal management and covid culling in Northern Cyprus, this paper compares different ways of doing kinship with nonhuman animals in a world of novel and changing ecologies. Based on long-term anthropological fieldwork, my empirical analysis demonstrates that kinship and reciprocity form two spectra that define different kinds of human-animal relation with nonhuman animal enemies. From nurture to biogenetic kinship (x-axis) and from open to closed reciprocity (y-axis). My theoretical analysis shows that combining these two spectra as axes yields a productive framework for evaluating other approaches to human-animal relations beyond Northern Cyprus. In particular highlighting the benefits of 'ecological kinship', I conclude that using this comparative framework enables clearer navigation of different ways of relating to potential animal enemies.

Introduction

This paper is part of a special issue on kinship with nonhuman enemies. I explore the management of game animals (animals managed for recreational hunting) and their habitat in Northern Cyprus. A key component of this management is "the struggle against harmful ones" or culling of corvids. Drawing on the case of Northern Cyprus, I outline a way to compare different ways of doing kinship with nonhuman animals in a world undergoing "the next great migration" (Shah, 2020).

As climates and chemistries move and change rapidly in response to limitless economic growth, animals are stepping up their migration. Some following the shifting climates, they thrive in or thriving on new chemistries where the possibility arises. Some are dying, some simply surviving, some finding themselves in a less anthropilic role. All embedded within (micro)biomes globally dumped along hyper-subsidized trade routes, spilling over in pandemic pandemonium.

The animals that are thriving in these novel ecologies are often unwelcome. They are dubbed invasives, non-natives, pests, vermin, and enemies. They are perceived to be damaging human property, whether the built or natural environment (Orion 2015: 17). They are deemed by profit-driven pseudoecology to not belong, so eradication is legally dictated by the State (ibid 38-42). They are perceived as too numerous by sovereignties suffering from a colonial hangover, so they are culled by the sovereigns (Betz Heinemann et al., 2020). This paper outlines a framework for comparing these, and other ways of relating to novel and changing ecologies, or those animals that simply will not be controlled.

The key example I use is the juxtaposition of "good" game animals with "dirty" corvids in as the enemy in hunting in Northern Cyprus. Hunting is a recreational activity that 7% - in 2011 - of TRNC citizens are licensed to do. Hunters coming from various socio-economic backgrounds but almost all men. It is not an elitist sport, but a working man's hobby done with a shotgun and dog. Part of hunting "good animals" is the punishment of "bad" animals. In Northern Cyprus this takes the form of culling of corvids, ostensibly as a method population control, because they are deemed to be damaging game animal populations. The main legal game being Cypriot hare (*Lepus europaeus cyprius*), Chukar partridge (*Alectoris chukar*) and Thrush (*Turdus philomelos*).

However, the culling practice is an ecologically empty promise (Betz Heinemann et al., 2020). In spite of this, culling continues because it successfully reproduces the established authority of those managing it. In addition it keeps a partially complicit audience enthralled by a promised land of quality hunting encounters (Betz-Heinemann & Tzanopoulos, 2020). This begs the question: What would relations with shifting ecologies look like, without people being enthralled by an empty promise? In this case the 'ecologically empty promise' that culling corvids benefits game animals (ibid).

In this paper I answer this question by outlining a framework for comparing different ways of doing kinship with nonhuman animals (see Figure 1). To do this I first introduce the context of game animal management and corvid culling in Northern Cyprus. I then identify kinship and reciprocity as two spectra that make sense of human-animal relations in Northern Cyprus and beyond. Finally I combine kinship and reciprocity to answer my question of what possibilities sit beyond an enthrallment with ecologically empty promises.

Methods

Participant observation during three culling seasons (2014–16) enabled data collection on the conduct of the cull. Handwritten notes, photos, and video clips were taken to document the conversations and activities that constituted culling. Participant observation was also conducted at the offices of the TRNC Hunting Federation during daily work activities, including attending hunting club meetings and the processing of corvid heads, and were compared with findings gathered through participant observation across the rest of the year when game animals were hunted, again using documentation of practices and conversations.

Semi-structured interviews were conducted with research participants from these fieldwork contexts and life histories were obtained to respectively follow up on questions that had arisen during participant observation and to contextualize observations. Potential participants were identified through snowball sampling. From these, 37 participants were selected from a variety of locations and a range of socioeconomic statuses and ages using purposive sampling. These included people from across the five administrative regions of Northern Cyprus: farmers, factory workers, pensioners, estate-agents, lawyers, students, care workers, advertising executives, retailers, politicians, and waste collectors, ages 18–74 (average 48); 36 men and 1 woman, reflecting the national composition of the hunting community.

An archival review of the TRNC Hunting Federation's records was also conducted, as well those of the Interior Ministry and the National Archives to gather quantitative data on the number of corvid heads submitted by hunters in return for subsidies, how many people were specially licensed to perform the cull, as well as the historical and legal context of contemporary practices.

Background

In Northern Cyprus there are various authorities that manage the landscape. Hunting, game animals, related animals, plants, and the wider habitat are managed by Avfed (The Hunting and Conservation Federation), the Interior Ministry of the TRNC (Turkish Republic of Northern Cyprus) State, and the Department for Environment. During fieldwork with these authorities I observed that a social contract or promise was offered by them, in their documentation, trainings, and presentations, to anyone who was interested in hunting and officially belonged in Northern Cyprus. These were primarily men who identified as Turkish Cypriot including from the diaspora and people from Turkey settled in Northern Cyprus between 1974-80.

The promise was of belonging in a sovereign landscape that was clean, inviolate, and yielded hunting encounters with beautiful and innocent game animals. This was the ideal, the promised land. However, there were multiple hurdles to realizing this ideal. One of them was the perception that corvids undermined game management with their 'dirty behaviour' (ibid). This included the belief that they killed, ate and/or pecked out the eyes of game animals and other birds. Therefore, this 'dirty behaviour' and the challenge it presented to sovereignty of the landscape needed controlling.

Part of the contract to achieve this ideal was that hunters, in return for the protection of hunting by the State, provided the labour of achieving this promise. In doing so, they also lent credibility to the State through demonstrating the labour of responsible sovereignty and (paternalistic) care for the land by citizens of the TRNC State. One of these labours was conducting an annual mass culling of corvids by a sub-set of members of Avfed incentivised by State subsidies.

The problem was the "hydra effect"(Cortez & Abrams, 2016); the culling of corvids can trigger corvid strategies for population growth, giving rise to the observation of their abundance (Betz Heinemann et al., 2020). Betz Heinemann & Tzanopoulos suggest that the reason this ecologically blind cull continued was because it was a key practice in producing a simulation of an ideal of the land. In this case an inviolate and sovereign hunting ground based on performing activities that looked effective at providing care, whether or not these activities had efficacy (2020).

Kinship

In addition to the culling of corvids, game management in Northern Cyprus involved breeding gamebirds in an industrial environment. They were then released to freely roam the land and potentially be hunted. From the end of the 20th century onward, under the guidance of US and UK game scientists, it has been ensured that the birds released by the authorities were biogenetically the same as the 'native' *Alectoris Chukar* (Chukar partridges), after some earlier plans involving *Alectoris Rufa* (Red-legged partridges).

However, *Alectoris Chukar* bred in industrial conditions also brought with it the consequences of being nurtured in this mechanistic way. They lacked the genetic diversity, epigenetics, microbiota, and crucially the social development, to contribute as autonomous animals to the biome. In other words, hunting encounters were not enriched and neither was the biome. In a similar way, this reflects the situation with culling corvids, where the social systems of corvids - including how they behave and adapt over time as communities and in relation to human communities and the wider ecology - was not considered.

Ignoring their social life, corvids and *Alectoris chukar* were both managed as mechanistic units. Some added to every year and some removed. As with the earlier mix up between *chukar* and *rufa*, the culling did not differentiate other corvids, so by-catch was involved. The eugenic purity of the biogenetic relationship was not as important to my research

participants, by comparison to the importance of having performed the taxonomic bureaucracy of presenting a cleaned landscape. Hence, this mechanistic, taxonomic and biogenetic human-animal relation is better defined as a biogenetically defined assemblage of hunting management persons, spreadsheets, numerical script, and various birds. And hence it becomes an exemplary nonhuman paragon of anthropological questions of kinship, reproductive technologies, population control and their simulacra.

Through extensive research on new reproductive technologies, legal frameworks pertaining to procreation and ways of doing nationhood, Janet Carsten demonstrates that kinship is not biogenetically determined in reality, including in the so called "West". Instead, in practice "the boundaries of what is constituted by biology or kinship are not set-in stone, but may shift or merge in relation to each other" (2004: 188), even as a taxonomic discourse centred on a mechanistic idea of biogenetics dominates.

Maximillian Holland adds that the biological evidence supports the idea of what he calls "nurture kinship"; the understanding that kinship or social bonds are shaped by shared social environments and processes of interaction and care, rather than determined by biogenetic relationships (2012). However, calls for kinship with animals (e.g. Haraway 2016) suggest that there remains the need for articulating precisely what this call actually means in practice when talking about kinship between humans and nonhumans, especially beyond the personal scale.

Otherwise, talking about kinship between humans and nonhumans comes to rely on making fictive kin with "other-than-biogenetic kin" (Haraway in Clarke and Haraway 2018: 69). By definition this means rejecting biogenetics and biology when it comes to considering kinship and relatedness, which Carsten and Holland have demonstrated are part of, just not deterministic of, kinship. But not only that. A fictive other-than-biogenetic approach also then closes down considering what an ecological kinship rooted in a comprehensive understanding of biology (microbiology, ecology, political ecology, and historical ecology) means.

Simply put, humans are literally biogenetically inextricable from nonhumans. Therefore, the call for 'other-than-biogenetic' kin is a culturalist and individualist understanding of life and kinship. This means it is based on a similar logic to the neo-darwinian understanding of biology and evolution: understanding the development of life as being based on the transfer and exchange of symbols of information, either biogenetic or cultural. Furthermore, this transactional understanding of life, evolution and its development in time cannot account for "ecological knowledge" (Ingold in Descola and Pálsson 1996).

Ecological knowledge is derived in the moment of conducting a practice in context, requiring the immediate development of novel actions not simply derivable from one's individual cultural or biological self. Novel life, novel creations and development do not simply emerge from new mutations, or new information in the genome, from cultural texts or novel information mindfully applied. But ecological kinship is that and more. It emerges from and

resides in the intersubjective dialogue between humans and nonhumans across time and space. Where dialogue is not simply the cultural exchange of symbols or the projection of empathy between individuals, but the biological and social - the ecological - making and remaking of bodies of people, bodies of water or bodies of mountains. Hence, how our relations are organized with animals, across time and space defines what our kinship with them emerges as.

Carsten starts with the home and the domestic space, to explore kinship and family (2004). She highlights, where we eat as the centre of this. But she does not comment on what we eat, nor the relations we have with what we eat, what we make the home with, what we breath, or what we burn in the hearth. But these all make the home, the *domestic* space, and are increasingly sourced through industrially *domesticated* relations with nonhumans. Therefore, while it seems that a simple way to make the ecological promise of hunting encounters real means simply paying attention to animal (inter)subjectivities, such as how corvid social-life works, this in itself would not allow for efficacious ecological interventions (Betz-Heinemann et al., 2020). Because the history and geography, the temporality and spatiality of corvid-corvid, human-human and human-corvid relations also matters (see Figure 1). This is an ecological understanding of kinship.

Reciprocity

Reciprocity can be best considered on a scale from closed to open reciprocity (Graeber, 2001);

“open reciprocity keeps no accounts, because it implies a relation of permanent mutual commitment; it becomes closed reciprocity when a balancing of accounts closes the relationship off, or at least maintains the constant possibility of doing so. Phrasing it this way also makes it easier to see the relation as a matter of degree and not of kind: closed relations can become more open, open ones more closed” (ibid 220)

The organisation of hunting in Northern Cyprus along the lines of a public utility, rooted in its historical ecology (Betz-Heinemann & Tzanopoulos, 2020), defines game management as the maintenance of an ecosystem service that is free at the point of access for sovereign licensed citizens. Hence, within the national and geographical context of the TRNC sovereignty, specifically imagined through the assemblage of mapping and representational techniques involved (ibid), the organisation of hunting exists toward the open end of the reciprocity spectrum.

I introduce reciprocity because it offers a means for exploring the wider temporal and spatial scales of kinship with nonhumans (see Figure 1). It provides the scalability for understanding an ecological sense of kinship, beyond simply focussing on the lived social lives of corvids, such as paying attention to their breeding strategies in order to cull them more effectively. It

also goes beyond focussing on making kin with nonhumans as a personal and mindful human-animal relation and then expecting this to simply scale.

It also makes sense of game animal management in Northern Cyprus and offers a means for navigating its ongoing adaptation. For example, as I have demonstrated so far, the main situation in Northern Cyprus can be described as the combination of a biogenetic kinship relation with open reciprocity (see Figure 1). However, this approach was increasingly failing in the eyes of people who hunted. And some hunters were not accepting this, and instead experimenting with ways of adapting. As the leader of Avfed during my fieldwork would chant everyday himself "*adaptasyon, adaptasyon, adaptasyon*".

Hence, exploring how these adaptations reflect direct movements along the spectrum of kinship and reciprocity and looking at what other possibilities open up elsewhere along these two spectra is imperative. This will indicate through comparison and observation of recent/historical adaptations in Northern Cyprus and elsewhere, what potential for success or failure there is in adapting relations of kinship and reciprocity.

For example in Northern Cyprus, a loose form of maximum sustainable yield (MSY)¹ exists with regards to hunting, whereby hunters are not meant to take more than a set number of game birds each time they go hunting. It did not play a key role with hunters during my fieldwork in Northern Cyprus as the release of farmed gamebirds was aimed at creating a surplus of game birds in order to maintain a system of open reciprocity. Nonetheless, it remained a legal possibility for enforcement and thus a potential measure for adaptation. If quotas of this kind² were to become an important method of game management this would reflect a movement toward the closed end of the reciprocity spectrum.

The current failures of game bird management expressed to me by most research participants, were articulated by some participants as being a matter of open reciprocity being abused. As one ex-committee member of Avfed disillusioned with game management articulated it, "some hunters have past criminal records, they cannot be trusted with what they do in hunting and should not be given a license as they exploit hunting." Such a perspective suggests that the problems of open reciprocity could be resolved through a more closed approach.

However, taking a comprehensively addressed example of a context where restrictions on access to licenses are already limited and quotas set, Thornton et al. demonstrate that the framework of MSY is problematic (Thornton et al., 2010b, 2010a). They argue that in order to stop people similarly over harvesting, in this case herring, environmental managers and scientists were tasked with creating a model that calculated how much biomass could be

¹ Maximum sustainable yield is a kind of modelling used to define what the largest amount of a population of a certain species is that can be harvested every year, without negatively impacting the reproduction of that population over time.

² Quotas should not be confused with taboos on harvesting, where the latter are based on need, but instead the quotas in Northern Cyprus, if used, would reflect a loose idea of their being a limited number of game birds to go around for hunting, so people should not over harvest at the expense of other hunters.

taken by licensed actors of a particular species without compromising the overall supply of that species. Putting aside whether, in practice the resultant quotas are actually enforceable³, Thornton et al. note that MSY does not consider whether the method of harvest destroys a habitat, so long as yields can be sustained. In addition it lumps all non-commercial mortality of a species as "natural mortality," which cannot be controlled:

"As a consequence such mortality factors as disease, predation, or even subsistence harvests are not modelled (in time or space) or fine-tuned for local conditions of predation, disease, habitat, or other variables. The lack of a fine-tuned spatial prescription for exactly when and how the harvest should be removed in order to minimize ecosystem impacts is perhaps the greatest weakness of the present management regime." (ibid 101-102)

On top of this, the benchmarks for what is the correct size of species population that needs to not be harvested is ahistorically defined, so under MSY people often try to harvest from and save what is a population in terminal decline (Thornton et al., 2010b, 2010a). In other words, the focus is again biogenetic, taxonomic, and mechanic, and again on one species, in this case *Clupea pallasii*. But this time some attempt has been made to move toward closed reciprocity through trying to quantify a species and how much of it can be harvested.

The established response to the flaws highlighted here has largely involved trying not to miss out on all the factors missed by MSY models, through mapping out and quantifying more of a socio-ecological system involved in a supply chain and taking these measurements into consideration, sometimes with attention to the value chain. The purpose being to measure more perfectly what needs to be inputted in order to maintain outputs, as well as seeking to identify what exactly is hindering this process. The name given to this "input-output management" approach is Sustainable Development (Mitcham, 1995) and has come to include particular innovations such as natural capital and carbon offsetting.

These innovations move adaptation further in the direction of close reciprocity. Animals that are perceived to not be contributing, not belonging in the input-output managed ecosystem, are consequently identified as animal enemies, and so pesticides or other eradication methods are applied. However, both the biology and economics underlying the move to a biogenetic-closed reciprocity are one-dimensional. On the biological side there is (i) a lack of recognition of trophobiosis - "a pest starves on a healthy plant" (Chaboussou & Sydenham, 2004), (ii) disregard for the benefits of novel symbiosis and (iii) interventions are implemented that ignore ecological succession. It is this ignorance that then necessitates pesticides and eradication methods that neuter the ecology they are applied to.

On the economics side, the complexity of nonhuman lifeworlds is sought through a mechanistic conceptualisation of the world as transactional nodes, rather than ecological kinships. It is a process of creating simulated fictions or models of ecosystems, except these fictions claim not only to be able to map and control a sovereign territory's boundaries, but

³ Informal discussion with colleagues, who have worked as enforcement officers on large fishing vessels, inform me that the threat of violence is used to ensure the persons monitoring their quotas do not record the extensive exceeding of fishing quotas.

also to map and manage all of the transactions that take place within in it as a system of closed reciprocity. This is clearly a result of natural scientists assuming that neoclassical economics is economics or that one must work within it. In doing so the presumption is that reciprocity is by definition closed, and any move towards open reciprocity is in fact embracing chaos and not bringing necessary order to the world.

The combination of these two factors, is what Ingold indicates as an Aristotelian view of the world or hylomorphia; being is a compound of matter following form, or mind over matter (Ingold, 2010). And what Bateson indicates as an approach that ignores 'warm data' and thus issues directive correctives in order to try and command a living system to be or not to be a particular way (Bateson & Brubeck, 2016). An illustrative analogy being the model of education called schooling which sees students as unformed primitive lives to be moulded through the imposition of a template, and disagreement with this largely focuses on how to make that template more inclusive (Derrida, 1992).

Ecological Kinship

What if instead of combining biogenetic kinship with closed reciprocity, nurture kinship is combined with open reciprocity. The case raised by Thornton et al, that explores MSY is again pertinent (Thornton et al., 2010b). It juxtaposes the failure of MSY against another cosmology of environmental relations that has been suppressed. Thornton et al. identify it as a form of collaborative reciprocity with the ecosystem, called *at yáa awuné* by the Tlingit speaking people in Alaska North America. This being a principle of respect that translates as "relational sustainability"; a combination of open reciprocity and nurture kinship (Thornton et al., 2010a).

This marginalized cosmology does not pretend to be able to statically map life in order to work out how it can be sustainably harvested. Nor does it pretend by contrast that all knowledge is purely subjective powerplay. Instead, in this example the technical focus is on enriching the habitat for herring reproduction by using locally abundant and salient materials. One technique being sinking hemlock cuttings in coastal waters during herring spawning to increase the surface area that eggs can attach to and successfully hatch. Beyond these technical practices, the focus on enriching herring habitat is part of a wider cosmological strategy of *yáa awuné* or 'respect', as herring are mythologized as a cultural and biological keystone species.

This wider cosmological strategy facilitates herring to autonomously regenerate and crucially initiates trophic cascades. Where trophic cascades are powerful indirect interactions that can alter an entire ecosystem. In this case Tlingit cultivation strategies lead to more herring larvae successfully hatching, increasing the potential energy that can then flow through the food chain. Cascades that not only enable local sustainable human subsistence practices but also generate ripples of abundance that travel out beyond the local to the regional ecosystem and beyond. Hence, this regime combines both nurture kinship and open reciprocity and in doing so has been historically successful at achieving its aims.

There are many examples of peoples⁴ who have successfully combined open reciprocity with nurture to achieve ecological kinships. Many of the "natural" and unique habitats valued today emerged with people, but cosmologies that generate trophic cascades have usually been suppressed. Take the Karuk people, in California North America, who have not been able to manage their homeland as they have been prohibited from conducting traditional burns. Many species have declined due to this. The Karuk people have called attention to this and that humans and wildlife not only can coexist, but actually thrive together (Anderson & Lake, 2013; Rossier & Davis, 2019).

Another example is the Eveny people, in Far East Russia, who have developed a cooperative social contract with *kujjai* reindeer that is not based on the closed reciprocity of a transactional exchange with a species defined biogenetically, as is dictated by the established discourse on domestication origin stories. Eveny are perfectly aware reindeer are one biogenetic species but there is no single name that encompasses *buyun* (wild) and *oron* (domesticated) reindeer. This is because they recognise that certain uniquely categorized *kujjai* deer nurtured and developed a behavioural understanding with humans that led to forms of variegated domestication, rather than the unilinear domestication of undifferentiated reindeer by humans (Willerslev et al., 2015).

Then there is also the Achuar's swidden-fallow agroforestry" in Amazonia (Descola, 2016). In addition to much of the archaeological record from pre-Columbian South America suggesting most civilizations there based their human-animal relations on an ethos of an open reciprocity between predator and prey (Weismantel, 2015). There is also the Kuranko's modification of edaphic conditions ripening soil and generating forest islands in the savanna of guinea in Africa (Fairhead and Leach, 1996). The complex ecological nuance of rice farmers in West Africa based on understanding rice within its network of ecological kinships with animals, 'pests' and other plants, rather than as a biogenetic commodity to be mechanically imposed on the land (Richards, 1990). The generation of the rich and novel Serengeti ecosystem in East Africa by fire-adapting pastoralists and hunting societies, based on open reciprocity between human-bovine assemblages and 'wild' animals, insects, teste flies and more. Culturally and historically speaking these human-environmental relationships reflect an approach that has been the rule not the exception for reproducing life on earth.

Coming back to Northern Cyprus, techniques of nurturing kinship have also seemingly been experimented with. One example being the placing of water barrels at strategic points throughout the landscape. The idea being that game animals can feed from them during the hot summer months. However, the method by which it was done contrasts, for example with the Tlingit herring example, in that it supported a biogenetic human-animal relationship. The

⁴ Collectively these people are often called 'indigenous', however in order to avoid "ethnographic nostalgia and the... quest for a singular, primordial authenticity" (Theodossopoulos, 2016) and because it is not actually that clear cut, I simply refer to peoples and what they call themselves.

problems with watersheds in Northern Cyprus were reduced to water as quantity, at best availability, along a supply chain. Because of this water barrels were anthropocentrically plonked across the landscape and recorded on a map, generating a visual from a managerial perspective that showed how at an essentialist level water had been distributed across the landscape. This means water was literally and conceptually abstracted in this strategy. Therefore it supported the biogenetic human-animal relationship because it ignored that for water to be a meaningful part of bird life it needs to be a meaningful part of the landscape⁵.

This practice sits at the biogenetic end of the spectrum, because biogenetic defines an assemblage of taxonomic and mechanistic managerial practices, defined by a biogenetic discourse when referring directly to animals. The game birds were treated as mechanical biogenetic objects that needed supplying with water as resources. In sum, rather than a relational sustainability or nurturing of an ecology, there is a logic of gifting up - inputting - resources with an expectation of outputs, but absent of the necessary non-anthropocentric nurture kinship with the land.⁶

The rendering of life and landscape as biogenetic for the purposes of managerialism, can also take on some relations a closed reciprocity alongside nurture kinship. When it comes to unwelcome animal's nurture kinship has also started to emerge in places like New Zealand. For example, the national Zero Invasive Predators (ZIP) programme, which pays attention to the behaviours of animal enemies, so they can attempt to control and eradicate them better, in their case in order to achieve the ideal of biogenetic nativism.

Therefore, returning to corvid culling: if hunters and their communities in Northern Cyprus were to (i) understand the social systems of corvids, (ii) listen to the wider comprehensive biology they are a part of, and (iii) open reciprocity was considered beyond a nativist-state logic, then hunters might stop being enthralled by the empty promises of their elected authorities. In addition this might then open up space for the rich diasporic and decolonial traditions of ecological kinship that many of my research participants also expressed, in order to realize their a form of ecological kinship.

Conclusion

During my fieldwork corvids were still simply seen from a management perspective as units constituting a population of which as large a number as possible needed to be removed every year. They needed to be removed because they were not seen as contributing to the internal system of open reciprocity in place in Northern Cyprus, and so their thrival is interpreted as

⁵ This builds on a history of Cyprus being the most densely dammed country in Europe. Hence replacing the complexity of micro and macro diverse streams and wetlands, with plastic barrels of biotically contaminated water, creating zones for disease transmission, open to predators, and negating the fact that water is not simply drunk by many animals in the same way humans gulp it down, but more a question of moisture.

⁶ This, however, does not mean this practice does not suggest signs of potentially avenues opening up for a more nurture-based approach to kinship combined open reciprocity.

an agent outside the system exploiting a sovereign public resource. By definition, this perceived unwillingness by corvids to be dominated, enabled by an intelligence akin to humans, is seen as an attack on sovereignty meaning they are an enemy.

This is one example of one kind of regime of human-animal relations, where corvid culling is just the other side of the human-animal relation of breeding game birds. Other examples of human-animal relations, as indicated, can be compared through the axes of kinship and reciprocity (See Figure 1). The key thing to note is not that the ideal or promise is empty, and that a different utopic ideal needs imagining. Instead, the axes provide a guide to the how some key relationships (reciprocity and kinship) interact to generate different human-animal relations and related assemblages.

These assemblages can be defined representationally by geographic maps, systems maps or relational totems. They can be navigated by road and borders, arrows and nodes or swells and pawprints. The axes that have been defined here are themselves a critical realist construct; an analytically conceived means to orientate oneself according to intersubjective perspectives found through economies of nurture built on reciprocity. Obviously if that is not one's ideological concern then death to *corvidus economicus* it is.

Bibliography

- Anderson, M. K., & Lake, F. K. (2013). California Indian Ethnomycology and Associated Forest Management. *Journal of Ethnobiology*, 33(1), 33–85. <https://doi.org/10.2993/0278-0771-33.1.33>
- Bateson, N., & Brubeck, S. B. (2016). *Small arcs of larger circles: Framing through other patterns* (First edition). Triarchy Press.
- Betz Heinemann, K. A., Betmezoğlu, M., Ergoren, M. C., & Fuller, W. J. (2020). A Murder of Crows: Culling Corvids in Northern Cyprus. *Human Ecology*, 48(2), 245–249. <https://doi.org/10.1007/s10745-020-00154-4>
- Betz-Heinemann, K. A., & Tzanopoulos, J. (2020). Scarecrows and Scapegoats: The Futility and Power of Cleaning a Landscape. *Worldwide Waste: Journal of Interdisciplinary Studies*, 3(1). <https://doi.org/10.5334/wwwj.33>
- Carsten, J. (2004). *After kinship*. Cambridge University Press.
- Chaboussou, F., & Sydenham, M. (2004). *Healthy crops: A new agricultural revolution*. Carpenter.
- Clarke, A., & Haraway, D. J. (Eds.). (2018). *Making kin not population: Reconceiving generations*. Prickly Paradigm Press.
- Cortez, M. H., & Abrams, P. A. (2016). Hydra effects in stable communities and their implications for system dynamics. *Ecology*, 97(5), 1135–1145. <https://doi.org/10.1890/15-0648.1>
- Derrida, J. (1992). *Force of Law: The 'Mystical Foundation of Authority'*. In ed. Drucilla Cornell, Michael Rosenfield and David G. Carlson.
- Descola, P. (2016). Landscape as Transfiguration. *Suomen Antropologi: Journal of the Finnish Anthropological Society*, 41(1). <https://journal.fi/suomenantropologi/article/view/59038>

- Descola, P., & Pálsson, G. (Eds.). (1996). *Nature and society: Anthropological perspectives* (Reprinted). Routledge.
- Graeber, D. (2001). *Toward an anthropological theory of value: The false coin of our own dreams*. Palgrave.
- Haraway, D. J. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.
- Holland, M. (2012). *Social bonding & nurture kinship: Compatibility between cultural and biological approaches*. London School of Economics and Political Science.
- Ingold, T. (2010). The textility of making. *Cambridge Journal of Economics*, 34(1), 91–102. <https://doi.org/10.1093/cje/bep042>
- Mitcham, C. (1995). The concept of sustainable development: Its origins and ambivalence. *Technology in Society*, 17(3), 311–326. [https://doi.org/10.1016/0160-791X\(95\)00008-F](https://doi.org/10.1016/0160-791X(95)00008-F)
- Richards, P. (1990). *Indigenous agricultural revolution: Ecology and food production in West Africa*. Unwin Hyman.
- Rossier, C., & Davis, B. T. (2019). *Managing for Socio-Ecological Resilience First: How a New Type of Indicator Enhances Wildfire Resilience Monitoring*. <https://fireadaptednetwork.org/managing-for-socio-ecological-resilience-first-how-a-new-type-of-indicator-enhances-wildfire-resilience-monitoring/>
- Shah, S. (2020). *The next great migration: The beauty and terror of life on the move*. Bloomsbury.
- Theodossopoulos, D. (2016). *Exoticisation undressed: Ethnographic nostalgia and authenticity in Emberá clothes*. Manchester Univ Press.
- Thornton, T. F., Moss, M. L., Butler, V. L., Hebert, J., & Funk, F. (2010a). *Final Report to the North Pacific Research Board, Project # 728*. https://uas.alaska.edu/research/herringsynthesis/final_docs/HerringSynthesisFINAL102710.pdf
- Thornton, T. F., Moss, M. L., Butler, V. L., Hebert, J., & Funk, F. (2010b). Local and Traditional Knowledge and the Historical Ecology of Pacific Herring in Alaska. *Journal of Ecological Anthropology*, 14(1), 81–88.
- Willerslev, R., Vitebsky, P., & Alekseyev, A. (2015). Sacrifice as the ideal hunt: A cosmological explanation for the origin of reindeer domestication. *Journal of the Royal Anthropological Institute*, 21(1), 1–23. <https://doi.org/10.1111/1467-9655.12142>