LAW and MORE THAN HUMAN SOCIETIES[1]

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Thank you for the opportunity to be here and to speak to this topic of law and non-human beings and the societies that they construct. Human and non-human social beings actively participate in the evolution of their own cultures, norms, and governance regimes. This means that each being lives through a multiplicity rather than a single social and normatively structured world. Quite often we are mostly concerned with the implications of how human beings relate to other beings, geological spaces and materials. Life, however, does not solely revolve around a co-creative process between human and non-human beings. Non-human beings have their own connections with one another and other non-humans, both with and without our involvement. The Anthropocene posits that human beings influence the functioning of the natural world at the deepest levels. It is imperative that we move beyond this metaphor and recognise both the agency and social and normative worlds of all living beings, which may or may not be influenced by humans.[3]

There are bodies of scholarship that have sought to understand the complex relations between non-human worlds. Some seek to integrate and entwine humanity within the natural world, as seen in Haraway's work on 'sympoeisis'[4] or Margulis's concept of 'holobionts'.[5] Others endeavour to decentre humanity, positioning it as one of the many social living beings interconnected within our networks or assemblages.[6]

[1] This paper is based on the keynote delivered at the 2023 symposium on *Biodiversity and Animal Law: Challenges and Synergies* hosted by the Helsinki Animal Law Centre and the Research Group on Rights of Nature and Animals. My thanks to Yaffa Epstein, Visa Kurki, Veerle Platvoet and Iris Pitkänen for organising the symposium.
[2] I am grateful to my PhD student, Shelley Kolstad for her excellent research support on this paper.
[3] There is nothing new about the idea that material and non-human beings have agency and are social. See popular examples: Jane Bennett, *The Enchantment of Modern Life* (Princeton University Press 2001); William E. Connolly, *The Fragility of Things* (Duke University Press 2103) and also Facing the Planetary (Duke University Press 2017). Importantly see also Bruno Latour, *Reassembling the Social* (Oxford University Press 2005).
[4] Donna Haraway, *Staying with the Trouble* (Duke University Press 2016).
[5] Lynn Margulis, 'Words as Battle Cries: Symbiogenesis and the New Field of Endocytobiology' (1990) 40(9) Bioscience 673-677.
[6] Gilles Deleuze and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (University of Minnesota Press 1987); Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford University Press 2007); Manuel De Landa, *Assemblage Theory* (Edinburgh University Press 2016).

Haraway's[7] and Latour's[8] work stand out, emphasizing the significance of actor networks in understanding the relationships between humans and non-humans. Concepts like mutual ecologies[9] do something similar in ecology. Ideas describing deep entanglements and emerging mutualities have found their way into law as well.

In this discussion I assume that non-human beings don't just act causally but are creative, unpredictable, and organize by disciplining or constraining themselves and what they do in relation to humans and other non-humans. My discussion emphasizes the need to understand the material, social, and emotional features of the lives of non-human beings using science, but also by drawing on direct experience, which includes observing the world or directly interacting with it.[10] This all suggests that legal and normative discussions need to reflect the more dynamic, reflexive and adaptable orderings that exist in the world. More critically, the 'social' of socio-legal studies and law-in-context scholarship has to better account for the lives of non-human beings. I engage in a diagnostic study in this discussion highlighting the challenges of legal studies scholarship that ignores non-human beings.

I will first begin with a brief review of legal scholarship that explores the concept of the non-human and how my approach seeks and wants to go further. I then use a case study method to do a simple ethnographic study to identify the social and normative aspects of the life of a tree in the context of animals and materials that co-exist with it. By doing so, I hope to shed light on the interconnectedness of all living things within the context of a particular tree's existence. I must point out that my case study is diagnostic and illustrative rather than determinative of certain outcomes. Through the discussion in this last section, I invite you to engage with me as I develop the foundations for other ethnographic studies to come.

1. Law in More-than-human Societies

The focus on the 'human' environment has created challenges for environmental law and governance scholarship developing both theoretical and applied approaches that

[7] Haraway (n 4); Donna Haraway, *When Species Meet* (University of Minnesota Press 2008).
[8] Latour (n 6).
[9] Augustin Fuentes, 'Naturalcultural Encounters in Bali: Monkeys, Temples, Tourists and Ethnoprimatology' (2010) 25(4) Cultural Anthropology 600-624.
[10] Tyler D. Jessen and others, 'Contributions of Indigenous Knowledge to Ecological and Evolutionary Understanding' (2022) 20(2) Frontiers in Ecology and the Environment 93.

genuinely focus on non-human living beings. This remains the case despite a substantial body of literature that engages with law using post-humanist, materialist, and other perspectives, as well as indigenous knowledge traditions. When I initially started studying environmental law 20 years ago, ecocentrism was a dominant philosophical approach to law,[11] exemplified by works like Preston's *Internalizing Ecocentrism in Environmental Law*[12] and Kotzé and French's contributions.[13] Ecocentrists have always advocated for limits to our interactions with the natural world. For instance, Kotzé and French discussed ecocentrism as a rationale for respecting 'ecological limits' in the Anthropocene era.[14] These debates have led to noteworthy developments concerning the rights of nature, which rely on ecocentric philosophies and ethics for their legitimacy and support.[15] As Nash aptly put it in 1989, the idea that the 'human-nature relationship should be treated as a moral issue conditioned or restrained by ethics is one of the most extraordinary developments in recent intellectual history'.[16] Subsequent legal and practical advancements have further recognised the reciprocal nature of the rights that non-humans need to take part in that relationship.

The ideas of 'socio-ecological' and complexity have entered legal discussions, urging us to explore the law's ability to be reflexive and constantly adjust to new realities.[17] The concept of ecological law seeks to decenter humans, positioning them among all other living social beings, and reevaluating what law means and entails from this

[11] E.g. James A. Nash, 'Biotic Rights and Human Ecological Responsibilities' (1993) 13 The Annual of the Society of Christian Ethics 137-162. On this idea of placing non-human beings at the matrix of things and reading reality from the perspective of the non-human being see for e.g. Didier Debaise, 'Stories of earthly things: for a pragmatist approach of geostories' (2022) 15 *Subjectivity* 109-118.
[12] Brian J. Preston, 'Internalizing Ecocentrism in Environmental Law' in Michelle Maloney and Peter Burdon (eds), *Wild Law – in Practice* (Taylor & Francis Group 2014).
[13] Louis Kotze and Duncan French, 'The Anthropocentric Ontology of International Environmental Law and the Sustainable Development Goals: Towards an Ecocentric Rule of Law in the Anthropocene' (2018) 7(1) Global Journal of Comparative Law 5-36.
[14] ibid.
[15] Exemplified by studies like Martuwarra RiverOfLife and others, 'Yoongoorrookoo the Emergence of Ancestral Personhood' (2021) 30(3) Griffith Law Review 505 – 529; Alessandro Pelizzon, 'An intergenerational Ecological Jurisprudence : The Supreme Court of Colombia and the Rights of the Amazon Rainforest' (2020) (2)1 Law, Technology and Humans 33-34; Elizabeth Macpherson, *Indigenous Water Rights in Law and Regulation: Lessons from Comparative Experience* (Cambridge University Press 2019); Erin O'Donnell, *Legal Rights for Rivers: Competition, Collaboration and Water Governance* (Routledge 2018).
[16] Roderick Frazier Nash, *The Rights of Nature: A History of Environmental Ethics* (University of Wisconsin Press 1989) 4.
[17] E.g. Barbara A Cosense et al., 'Designing Law to enable adaptive governance of wicked problems' (2020) 73 Vanderbilt Law Review 1687.

perspective.[18] These efforts to rethink environmental law have created critical spaces for deliberations about human institutions. However, they also represent jurisprudential and practical endeavours that strive to achieve something akin to the theories described earlier—using human attributes and qualities to apply to non-human beings or recognizing our entanglement in the world around us. More fundamentally, they seem to seek to position the non-human as human. Burdon has additionally argued that these theories tend to separate our legal system from 'material reality' and fail to engage directly with the 'forces that have given rise to the Anthropocene.'[19]

Legal geography has increasingly embraced place-based research.[20] This recognition is likely due to legal geography granting access to the local and grassroots experiences of people interacting with the materiality of the natural world.[21] Burdon's recent work critiquing the 'idealistic' and highly abstract orientations in environmental law has also pushed him towards adopting a more materialist and potentially place-based approach to understanding the impact of the natural world on the development of environmental law.[22] Richardson has made the most sustained contributions in this space. He has studied environmental law concepts and ideas drawing from wide-ranging disciplines and perspectives. His work titled *Time and Environmental Law* explored the challenge with law and policy decisions when viewed from the human perspective of time and space.[23] Additionally, he has studied environmental law concepts from the perspective of aesthetics,[24] history,[25] and film studies.[26] While these bodies of scholarship come closer to adopting the perspective of the non-human, I aim

[18] Cormac Cullinan, *Wild Law: A Manifesto for Earth Justice* (Chelsea Green Pub., 2nd ed., 2011); Geoffrey Garver, *Ecological law and the planetary Crisis: A legal Guide for Harmony on Earth* (Routledge 2021); Kirsten Anker and others, *From Environmental to Ecological Law* (Routledge 2020).
[19] Peter Burdon, *The Anthropocene: New Trajectories in Law* (Routledge 2023).
[20] E.g. Robyn Bartel and Nicole Graham, 'Place in legal geography: Agency and application in agricultural research' (2023) 61(2) Geographical research 193; Nicole Graham and Robyn Bartel, 'Farmscapes: property, ecological restoration and the reconciliation of human and nature in Australian agriculture' (2017) 26(2) Griffith Law Review 221-247.
[21] E.g. Tayanah O'Donnell, Daniel Robinson and Josephine Gillespie (eds) *Legal Geography: Perspectives and Methods* (Routledge 2023).
[22] Burdon (n 19).
[23] Benjamin Richardson, *Time and Environmental Law: Telling Nature's Time* (Cambridge University Press 2017).
[24] E.g. Benjamin Richardson, 'Aesthetics and environmental law: valuing Tasmania's 'ordinary' nature' 2018 27(1) Griffith Law Review 1-30.
[25] *Before Environmental Law* (Bloomsbury Publishing 2023).
[26] 'Cinematic Activism and Tasmania's Lake Pedder: How Film Shaped Environmental History' (2024) Australian Historical Studies 1-23.

to explore what insights these approaches offer when we start from the position that they interact socially with their surroundings.

More recently, Davies, in a book titled *EcoLaw*,[27] aimed to unpack jurisprudential debates about the normative world of living beings, going beyond merely decentering the human, although that is an inevitable outcome (but this is not a criticism as the work does more than that). She places the non-human, whether living or material, at the centre of the development of jurisprudence and theory. Davies advocates for a 'nomos,' a normative universe in which all living beings and material entities, including the Earth, generate their own values and norms, and human norms are an integral part of this natural nomos. She argues for a normative system emerging from material and living processes but emphasizes that it is not causally generated. Instead, it arises from the 'movement and interactions of matter at cosmic and geological scales, within life, and across ecosystems.'[28] These diverse normative systems interact and engage with one another, and according to Davies, they are not divided into distinct parts. The concept of a nomos that non-human beings creatively and contingently generate, rather than causally, was also advocated by Akhtar-Khavari and Hoy in a 2023 chapter contribution to the Burdon and Martel handbook on *Law and the Anthropocene*.[29]

The common theme driving the evolution of environmental law has been how the discipline engages ontologically with the question "what is nature?". Descola has for instance identified four different ontologies: naturalism, animism, totemism and analogism.[30] Most environmental law studies (with exceptions as discussed above) arguably only work through the naturalism frame which seeks to separate culture and nature. The shift moving forward for environmental law is enabling legal systems to account for other ontologies and epistemologies. Far from making a romantic gesture, other ontological frames can provoke different and deeper engagements with non-human social lives than naturalism has.

[27] Margaret Davies, *EcoLaw: Legality, Life, and the Normativity of Nature* (Routledge 2022).
[28] ibid.
[29] Afshin Akhtar-Khavari and Lachlan Hoy, 'The Nomos of Creativity in the Anthropocene' in Peter Burdon and James R. Martel (eds) *The Routledge Handbook of Law and the Anthropocene* (Routledge 2023).
[30] Philippe Descola, *Beyond Nature and Culture* (University of Chicago Press, 2003), 122.

Indigenous knowledge traditions (IKT) for instance recognise that 'reality' is 'elusive' and in need of 'constant testing against observations, and to interpretations by those qualified'.[31] This IKT sensibility recognises the possibility of the same being or system constantly changing. Richardson has recognised the value of IKT by arguing that in law making the materiality and the emergent properties of non-human beings must be defined and understood in the context of time and space.[32] IKT also emphasises different ways of generating knowledge. Traditional scientific techniques often rely on and emphasize 'project-related monitoring and observation' to make legal decisions.[33] IKT, on the other hand, place importance on 'long histories of knowledge generation'.[34] These differences suggest that ontology and epistemological concerns are important for making sense of non-human social communities and norms. IKT can expose legal systems to other ways of knowing nature which can have implications for how environmental law develops. Berkes and Jessen et al. have made interesting observations about how IKT aims to engage with values as explicit features of knowledge systems.[35] Berkes notes for instance that '[W]ays of knowing are informed by values and beliefs, as in "head and heart together"'.[36] Deterministic and formalistic approaches to knowing don't encourage a turn to values and beliefs. This makes it hard to identify how the human is involved in the social life of the non-human. IKT instead encourage coherent relationships by allowing values and beliefs to be central to meaning-making.

In the rest of this paper, I seek to identify with the non-human and explore how environmental law interacts with and helps non-human societies to evolve and normatively express themselves.

2. An ethnography of a more-than-human society: the normative life of the *Eucalyptus Camaldulensis*

In this section I describe a case study of a more-than-human society involving a mature forest red gum (*Eucalyptus camaldulensis*) that is around 125 years old and is located

[31] Fikret Berkes, *Sacred Ecology* (Routledge, 4th ed., 2018), p 289 (table 12.2).
[32] Richardson (n 23).
[33] Jessen and others (n 10).
[34] ibid.
[35] Berkes (n 31); Jessen and others (n 10).
[36] Berkes (n 31).

on a block of land in Brisbane, Australia. This tree has been at the centre of my six-year ethnographic diagnostic work whereby I have been asking myself if the red gum tree is socially and normatively influenced and determined by other non-human beings around it. Plant ethnography is evolving,[37] and I do not claim to have adopted a rigorous review of ethnography as a discipline and its techniques and practices.[38] In conducting the study of the red gum my efforts are best described as reflective of participating as an observer in the environment.[39] I aimed to observe with humility, 'gathering only that which [was] offered, when it [was] offered'[40] primarily through what my senses including sight, smell, hearing and emotional and behavioural affect (such as wariness of snakes) conveyed. I also utilised photography and adhered to the advice that drawing the tree myself, as a botanist would do, might enable deeper engagement.[41] While the subject of this ethnographic diagnostic is a plant, I sought to include and observe other organisms and the link to 'human social worlds', aligning with multispecies ethnography.[42] With the red gum as the catalyst I enlivened entanglement considerations, represented by activities, including connections with law, originating, terminating, or connecting with the red gum's presence. When considering some of the connections I was mindful of the opportunity to conceptualise 'life [as] the territory for the emergence of "interkingdoms," assemblages of heterogeneous processes', as Nealon contemplates following Deleuze and Guattari.[43] The IKT literature referenced above helpfully guided my observation by highlighting connection, entanglement and deeper meaning making experience that can come from

[37] E.g. John Hartigan, 'Plants as Ethnographic Subjects' (2019) 35(2) Anthropology Today 1-2.
[38] E.g. Hannah Pitt, 'On showing and being shown plants – a guide to methods for more-than-human geography (2015) 47(1) Area 48-55.
[39] See discussion by Stephen Lezak, 'Environmental Ethnography' (2023) 2(4) Progress in environmental geography 289, 303.
[40] ibid, citing Tim Ingold 'That's Enough about Ethnography' (2014) 4(1) HAU: Journal of Ethnographic Theory 383-95.
[41] See discussion by John Hartigan, *Care of the Species: Races of Corn and the Science of Plant Biodiversity* (University of Minnesota Press 2017) 264 -265.
[42] Eben S. Kirksey and Stefan Helmreich, 'The Emergence of Multispecies Ethnography' (2010) 25(4) Cultural Anthropology 545.
[43] Jeffrey T. Nealon, *Plant theory: biopower and vegetable Life* (Stanford University Press 2016) 119 commenting on Gilles Deleuze and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia, trans. Brian Massumi* (University of Minnesota Press 1987) 241-42: "A multiplicity without an ancestor? It is quite simple; everybody knows it, but it is discussed only in secret. . . . Unnatural participations or nuptials are the true Nature spanning the kingdoms of nature. Propagation by epidemic, by contagion, has nothing to do with filiation by heredity. . . . The difference is that contagion, epidemic, involves terms that are entirely heterogeneous: for example, a human being, an animal, and a bacterium, a virus, a molecule, a microorganism. Or in the case of the truffle, a tree, a fly, and a pig. These combinations are neither genetic nor structural; they are interkingdoms."

changes in the environment. My observations and entanglement considerations are articulated in the following paragraphs.

While I first physically encountered the red gum in 2017, I have also observed a black and white image rendered in a 1904 aerial photograph which is held by the Brisbane City Council.[44] The tree is older than I am. The tree is situated on top of an aquifer, is immediately surrounded by many other trees that are, judging by their size, younger than the gum tree, and has a similar-sized 'sibling', a distance of 50 metres away. It acts as a wind shield and unlike other trees around it, the red gum does not move with the wind. Birds, termites, reptiles and possums inhabit the tree, but there is no exclusive possession, as it is also host to migratory and predatory animals, including other birds and snakes. Two branches were cast off during one of the wet seasons, gravity crashing them to the earth. Where spatial cadastral data embodies human perspectives, the tree divides the land or indefeasible freehold title[45] of the block of land in Brisbane that it is growing on. Again, from a human perspective, the tree is protected and any interferences that are not prescribed require a permit from the Brisbane City Council. [46]

In studying close-up photographs of sections of the tree (see figures 3 and 4 below), the first thing I have noticed is the red gum's towering height over everything else, and its smoothly worn, generous girth. The tree and its sibling, as mentioned above, created the legal line and boundary for the property, its presence defining human relations across adjacent blocks for many years. The red gum's height and age signify the presence of an extensive root system which would extend in all directions in the soil responding to changes in the availability of moisture and nutrients. Situated as it is on top of an aquifer it is assumed the root system taps into the aquifer and is vulnerable to climate variables as well as human management—and mismanagement—of water resources.[47] This root system, though it may assist in keeping the structure of the surrounding soil intact, could have been damaged if any neighbouring buildings

[44] A river red gum can live between 500 – 1000 years, see Maxwell Ralph Jacobs, *Growth habits of the eucalypts* (Forestry and Timber Bureau, Canberra 1955).
[45] *Land Title Act 1994* (Qld) s 184(1) provides for title by registration; *Breskvar v Wall* (1971) 126 CLR 376.
[46] *Natural Assets Local Law* (2003) ss 8(1); 8(2)(b); 44.
[47] Water Act 2000 (Qld).

or concrete pathways were constructed with some building insurance policies requiring clearing of trees within specified distances.

The red gum bears several blunted branches, distinguished by their dark colour and the absence of foliage, marking them as no longer a living part of the tree. It is possible that the red gum closed off pathways for nutrients and water to these branches because the tree was stressed by disease, predation (existence of termite trails that eat the tree from the inside, see figure 5) or a limited supply of water or nutrients (see figure 5 and 6). Other plants or animals may have detected the red gum being stressed due to drought conditions. New developments in bio-acoustic testing on tomato and tobacco indicate that plants 'emit remotely detectable and informative airborne sounds under stress',[48] described as sounding like clicks and pops.[49] These dead branches, while still connected to the tree, create desired homes for animals, capturing rain and moisture for their use. Where these dead branches have fallen to earth, homes are also created for ground-dwelling creatures including rats, mice, and invertebrates. Some of these fallen branches will be considered unsafe or in positions detrimental to human amenity or the survival of other plant species, and need to be removed. For example, figures 5 and 6 show a branch that fell in 2024 and exhibits signs of intense termite activity inside the core of the branch. Stormy, windy weather dramatically increases the need for cleanup efforts which may instigate the purchase or hire of relevant equipment. Fallen branches have created, and continue to sustain, pathways and driveways where cars travel as there was nothing else on the property when it was first created. The existence of common and statutory laws regarding personal injury necessitates that I employ a professional arborist to prune the tree to avoid injury to others,[50] however the continued purchase of public liability insurance is also necessary to avoid significant costs associated with damage and harm done to people or property.

The living branches are of various sizes and taper and twist toward the sky, light foliage marking the crown. This light foliage allows sunlight to penetrate beneath the red gum, evidenced by the presence of dense shrubbery and other mid-sized trees with generous

[48] Itzhak Khait and others, 'Sounds Emitted by Plants under Stress Are Airborne and Informative' (2023) 186(7) Cell 1328, 1333.
[49] Ian Sample, 'Plants emit ultrasonic sounds in rapid bursts when stressed, scientists say' *The Guardian* (online 31 March 2023) < https://www.theguardian.com/environment/2023/mar/30/plants-emit-ultrasonic-sounds-in-rapid-bursts-when-stressed-scientists-say>.
[50] This is because of the Civil Liability Act 2003 (Qld).

foliage surrounding the red gum. All these plants take carbon dioxide out of the atmosphere and release oxygen. The red gum's sheer size protects smaller plant life and communities from neighbouring trees that might fall allowing for denser networks to develop. This scaffolding and layering of plant life creates an enabling and living habitat which ultimately shapes what happens in the neighbourhood. Animal societies, including legally protected birds,[51] engage throughout the day and night, their presence impacting on nearby humans. Particularly the dawn chorus causes humans to wake early and work either away from the habitat or in environments that may be closed off to their noisy presence. Migratory parakeets arrive once a year, particularly in dry conditions, because the tree digs into an aquifer and allows it to flower even without much rain falling on the ground. The parakeets eat and spread the flowers and seeds and then disappear within days of using the tree as a host. Resident possums and lizards attract pythons which in turn repels the presence of (some) humans, except for that highly skilled and possibly increasingly rare human, a snake-catcher.

The red gum, perhaps more than any other plant or animal to which it is host or protector, is open to all elements, including rain or lack thereof, wind, frost, and fire. One noticeable feature of protection for the red gum against fire is its ability to shed its outer layer. This outer layer or bark is joined on the ground by shed operculum, creating at times a thick layer of debris in flowering season. This debris, if scattered by the wind across concrete driveways and walkways, creates slip hazards in rainy conditions and supports the demand and corresponding supply of items such as personal leaf blowing equipment, and contributes to the cultural sound and performance of weekend suburban gardening activities. Intriguingly, all of this conceptually represents a potential assemblage of earthly forces of fire, gravity, wind, plant reproduction and survival, human safety including legal concerns, mechanical/electrical engineering of equipment, factories and how sounds impact on human culture. The question that agitates is what limits should we apply, if any, to considerations of how the red gum territorialises spaces?

The above observations and entanglement considerations of the life of the red gum are only very briefly sketched. The very otherness of plants, scale of activity and their sessile nature poses practical challenges for human observers, and places constraints

[51] They are protected under the Nature Conservation Act 1992 (Qld).

on law and society studies seeking to understand the more than human world. For example, complex activity between roots and microbes[52] and roots and fungi,[53] takes place out of human sight within the soil; the fascinating interaction between bees and flowers of the red gum, which has an electrical basis, can only be revealed with specialist equipment and knowledge.[54] While this study does not consider questions over whether the red gum's interactions involve sentience, subject of ongoing debate within the scientific community,[55] Hartigan's description of plants as 'actively constitut[ing] place' with plants possibly being 'far more exquisite ciphers of "place" than the mammals examined by ethologists and ethnographers' is tentatively revealed.[56] Critical legal conversations should consider the place-making role of plants, their '[ability] to respond appropriately to changing environmental conditions'[57] and their active involvement in the creation of opportunities for animal, including human, social, and cultural development. The local laws protecting the red gum referenced earlier do account for the tree to some degree. However, such laws are essentially tied to and influenced by human political considerations. The law-making process is entirely a human endeavour. You will not find any legislative submissions from the red gum, no doubt even the suggestion is controversial. Remaining plant-blind however diminishes our capacity to address human exceptionalism and the consequent trajectory of ecological devastation.[58]

[52] E.g. Kristine Crous, Belinda Medlyn and David S. Ellsworth, 'A fierce battle is being fought in the soil beneath our feet – and the implications for global warming are huge' *The Conversation* (Online, 6 June 2024) < https://theconversation.com/a-fierce-battle-is-being-fought-in-the-soil-beneath-our-feet-and-the-implications-for-global-warming-are-huge-231802>.

[53] E.g. Justine Karst, Melanie D. Jones and Jason D. Hoeksema, 'Positive citation bias and overinterpreted results lead to misinformation on common mycorrhizal networks in forests' (2023) 7(4) Nature Ecology & Evolution 501, 503: "…autoradiography has definitively demonstrated movement of carbon from one tree seedling to the mycorrhizal roots of another via a CMN, but most other laboratory studies on resource transfer lack the full suite of controls required to interpret the results, and sometimes overlook ecologically relevant treatments, namely neighbouring roots."

[54] See for discussion Dominic Clarke, Erica Morley and Daniel Robert, 'The Bee, the Flower, and the Electric Field: Electric Ecology and Aerial Electroreception' (2017) 203(9) Journal of Comparative Physiology 737-748.

[55] See recent target article by Paco Calvo and Miguel Segundo-Ortin, 'Plant sentience? Between romanticism and denial: Science' (2023) 8(33) Animal Sentience 1 which received numerous reactions to which the authors in turn responded: Paco Calvo and Miguel Segundo-Ortin, 'Plant sentience revisited: Sifting through the thicket of perspectives' (2023) 8(33) Animal Sentience 32. For an earlier discussion on the topic of plant intelligence see Michael Pollan, 'The intelligent plant' (2013) New Yorker 93.

[56] Hartigan (n 37) 2.

[57] Jon Mallatt and others, 'Plant sentience: The burden of Proof' (2023) 8(33) Animal Sentience 15.

[58] For an early discussion on this topic see James H. Wandersee and Elisabeth E. Schussler, 'Preventing Plant Blindness' (1999) 61(2) *The American biology teacher* 82-86.

3. Conclusions

In this paper I started with enquiring about the meaning and purpose of law when viewed from the perspective of the social and normatively functioning non-human being. There is now an abundance of literature suggesting that non-human beings discipline and constrain themselves, as well as emerge or exist by virtue of their interactions. Scholars have sought to distance themselves from the nature and culture divide that captured us through modernity. We now have to go further to better understand how human beings are entangled and then emerge from and through their interactions with material and non-human beings.

If anything, the Anthropocene has encouraged scholars to look at the world from the perspective of the non-human. This paper has suggested that law in society studies cannot ignore how humans are deeply constituted and influenced by non-human societies. I recognise that this suggests a kind of anthropomorphism that has also been the subject of critique for some time. Studies like the one edited by Daston and Mitman's titled *Thinking With Animals; New Perspectives on Anthropomorphism* tried however to ensure more nuanced ways of thinking about the subject.[59] There are lots of new and exciting possibilities for the deep reshaping and development of environmental law that is possible when we take the non-human more seriously. Some of these new prospects come from recognising and moving away from traditional conceptual assumptions that have determined legal discourse. Some examples include the notion of the autonomous, independent and bounded human as the only subject of the law. This has ensured that the law moderates competitive behaviour to protect different people or areas of the natural world. However, subjects of the law are also often co-constituted or subsumed in mutual ecologies.

In this paper, I have tried to develop and argue for the deployment of a technique for reshaping and developing environmental law using an anthropologically inspired method of doing ethnography. The work took the perspective of the tree rather than the traditional approach of asking about the human subject in the context being studied. Again, many others have done ethnography like this, but I sought to remain aware of the legal frameworks that were being influenced by the non-human beings.

[59] Lorraine Daston, *Thinking with Animals: New Perspectives on Anthropomorphism* (Columbia University Press, 2005).

This kind of work required me to avoid being influenced by certain concepts that traditionally shape how we view the natural world. For instance, localised experiences of the red gum, as discussed above, suggest that even when big branches break and fall, and die as a result, they are still alive when considering all the things that they do for other living beings around the tree. The language of waste and rubbish would also fail to measure the value of the branch for the social system that it is contributing to even when it falls. This requires the adoption of new concepts, such as obligations,[60] that can help measure how seriously we care for the ecosystem under our consideration.

There is great creative potential ahead for the development of environmental law given the promises of theory and jurisprudence to engage us more with the inhuman and or non-human societies.

Figure 3 and 4: Red Gum: *eucalyptus camaldulensis* located in a Brisbane suburb in Queensland, Australia.

[60] I use this word without assuming a corollary of rights. See Daniel Matthews and Scott Veitch (ed*) Law, Obligation, Community* (Routledge, 2018).

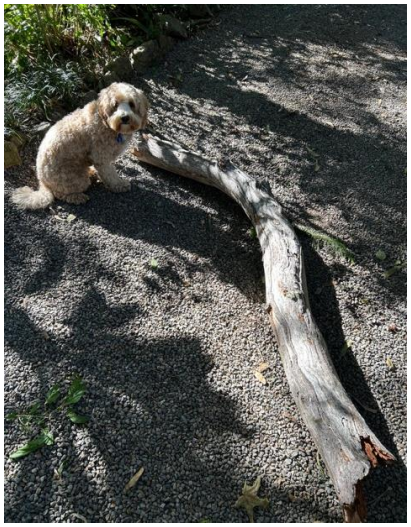

Fig 5: Oddie my dog interacting with and sitting next to a fallen branch of the Red Gum, *eucalyptus camaldulensis*, located in a Brisbane suburb in Queensland, Australia.

Figure 6: inside of the termite eaten branch of the Red Gum, *eucalyptus camaldulensis* tree, located in a Brisbane suburb in Queensland, Australia.