

Edge{s} of the “Anthropocene”: Standard and Non-standard Post-humanisms

Nandita Biswas Mellamphy, Western University

Abstract:

This article examines three distinct onto-political modes: the human-centric onto-politics of “centring the human”, the post-human onto-politics of “de-centring the human,” and a third mode that rejects and argues against these options in favour of jettisoning the human/non-human dyad altogether. Instead of placing humans “*in or on* the loop” with other species, a third model would place humans “*out of the loop*” of command. I argue that contrary to claims, the post-human declaration of “de-centring the human” cannot be considered “*post-anthropocentric*” (implying the abolition of anthropocentrism), though it can be considered “*anti-anthropocentric*”. Only the onto-politics of abolition would truly be post-anthropocentric because only it would eliminate the human/non-human conceptual dualism upon which the onto-politics of centring and de-centring is based.

Keywords:

Anthropocentrism, Human-centrism, Post-humanism, Feminisms, Ontopolitics, Political Ontology, the Anthropocene, Post-Anthropocentrism.

1. Introduction: The Onto-politics¹ of “Centring” & “De-centring”

Human-centrism positions humans at the centre of agency, cognition, and broader relations or networks of exchange/communication. The idea that humans possess unique capacities that make them exceptional and superior as a species is used as a justification for the view that posits that humans should have command over non-humans. The human capacities for reason, autonomy, impartiality, and universality are used as a defence for the mastery, stewardship and/or management of non-humans. Humans are conceptualised as being in the loop of control, justifying mastery and superiority over those who are deemed to be incapable of reaching “full potential” (presupposing a teleological state of being “fully human”). Strong human-centrism affirms the achievement of human control using the instruments of reason and by using reason as an instrument; those who do not fit this standard are relegated to an instrumental status. Since Plato and Aristotle, theories of “human nature” have been used to make claims that view “rational” humans as the only appropriate subjects for moral consideration. The “human” has been portrayed as a creator of cultures and technologies, a bearer of rights and responsibilities, and a cultivating force that forges civilisations and political societies using other-life forms, including animals, plants, machines, and so-called “sub-humans” (e.g., women, children, slaves, and colonised subjects)—those who, historically, have been regarded as deficient in rationality and intrinsic moral worth, and hence treated as less than human. Technologies/techniques² are means by which human exceptionalism is further externalised and instrumentalised. The human-centric frame, in which humans transcend their animal roots through intellect, and instrumentalise nature’s resources for the benefit of humankind, places humans “in the loop” and at the epicentre of command, sanctioning sexism, racism, slavery, colonialism, and bio-spheric degradation/exploitation by conceptualising control in terms of an oppositional dualism between rational humans and those lacking the full measure of agency, rationality or culture. The master/slave dichotomy at the heart of this version of human control views domination as natural and befitting.³

1 Onto-politics is defined as a “set of grounding ontological claims that form the basis of discussions about what it means to know, to govern and to be a human subject”. David Chandler, *Onto-politics in the Anthropocene: An Introduction to Mapping, Sensing and Hacking* (New York: Routledge, 2018), xiii.

2 As Max Weber has argued in *The Theory of Social and Economic Organization*: “The term ‘technology’ applied to an action refers to the totality of means employed as opposed to the meaning or end to which the action is, in the last analysis, oriented...What is concretely to be treated as a ‘technology’ is thus variable. The ultimate significance of a concrete act may, seen in the context of the total system of action, be of a ‘technical’ order; that is, it may be significant only as a means in this broader context. Then concretely the meaning of the particular act lies in its technical result; and conversely the means which are applied in order to accomplish this are its ‘techniques.’” (New York: Oxford UP, 1947), 160–161. According to Jacques Ellul, technique includes (but is not limited to) machines, and technologies are merely part of vaster technical phenomena; see *The Technological Society* (NY: Knopf, 1964), xxv.

3 Nandita Biswas Mellamphy. “Humans ‘in the Loop’? Human-Centrism, Post-humanism , and A.I.,” *Nature and Culture*, 16, no. 1 (2021): 11–27. <https://doi.org/10.3167/nc.2020.160102>.

It is not surprising, then, that this model has served as the backdrop for the concept of the “Anthropocene”, which makes tangible the unequal consequences of the worldview that centres the human ontologically within the loop of command and control. The concept of the “Anthropocene” designates a “human-dominated, geological epoch, supplanting the Holocene,”⁴ and while for some the concept represents the vindication of human-centrism, meaningful human control, and the path to progress, for others, the concept has led to the challenging of human-centric, modernist, and capitalist assumptions.

Nature can no longer be understood as operating on fixed or natural laws, while politics and culture can no longer be understood as operating in a separate sphere of autonomy and freedom. [...] [T]he Anthropocene appears to bring to a close the human-centred, subject-centred or anthropocentric understandings of power and governmental agency.⁵

The onto-politics of “centring the human” represents the prevalent view that humans possess unique capacities that make them exceptional and entails putting humans “in the loop” of control over all other species and expressions of intelligence, emphasising human superiority and treating non-human intelligences as means to achieve human ends. The onto-politics of human-centrism prioritises human oversight and conceptualises humans as beings governed by *nomos* or law while pursuing whatever means necessary (such as the instrumentalisation and de-humanisation of other life forms) to achieve desired outcomes. Within this mastery-driven model, humans govern unpredictability through the instrumentalisation of their rationality and their normative and norm-making capacities. By contrast, the onto-politics of de-centring human-centrism focus on taking the human out of the centre and on to the ontological loop of control with other species:

While the perspective of the Anthropocene centres human beings and their agency and interventions in geo-epochal transformations through technological developments and biochemical products, post-human perspectives de-centre the idea of humankind being in charge of technical and ideological mastery over nature.⁶

Post-humanism provides a strong theoretical basis for deprioritising and displacing the onto-politics of human mastery, emphasising embodiment (instead of abstraction), entanglement (instead of autonomy), and trans-individuation (instead of individualism) or the affirmation of transversal, cross-modal, and multispecies connections and compatibilities between human animals, non-human animals and machines.

4 Paul J. Crutzen, “Geology of Mankind,” *Nature* 415, no. 6867 (2002), 23. <https://doi.org/10.1038/415023a>.

5 Chandler, *Onto-politics in the Anthropocene*, 5, 21.

6 Kornelia Engert and Christiane Schürkmann, “Introduction,” *Nature and Culture*, 16, no. 1 (2021): 3. <https://doi.org/10.3167/nc.2020.160101>.

In the following, I set out to examine three distinct onto-political modes: *human-centric* onto-politics on the one hand; the “post-human” onto-politics of *de-centring the human* on the other; and a third mode that *rejects* these first two positions arguing against the politics of repair, care, new possibilities and entanglement, in favour of *jettisoning* and *abolishing* the human/non-human dyad altogether. Instead of placing humans *in* or *on* the loop with other species, a third model would place humans *out* of the loop of command, entailing the phasing-out of the categories of “human” and “non-human” as such. I argue that contrary to the claims of critical feminist post-humanists, the post-human politics of de-centring the human cannot be considered “*post-anthropocentric*” (implying the abolition of anthropocentrism), although it *can* be considered “*anti-anthropocentric*.” I argue only the onto-politics of *abolition* can be called and considered post-anthropocentric because it conceptually eliminates the human/non-human dualism upon which the onto-politics of centring and de-centring humans is based.

2. The Onto-politics of “Centring”: Humans *In* the Loop

The human-centric “in-the-loop” onto-politics of control has centred on the human intellect—especially the activity of deliberating about human ends, which requires mental and practical capacities to discern the worthy ends of human life. Human oversight is prioritised, and privilege is given to scientific knowledge-processes that concentrate on the judicious application of human mastery to technologically transform nature. Human command is dualistically and hierarchically conceptualised as a superior order in control of a distinct but inferior one, following “a model of domination and transcendence” “in which freedom and virtue are construed in terms of control over, and distance from, the sphere of nature”.⁷ Humans are conceptualised as a civilising force that presides over an unpredictable order that has, historically speaking, included plants, animals, machines and even other humans such as women, children, slaves and the colonised who have been denied consideration as subjects with intrinsic moral worth. Liberal normative theories of human rights are grounded in this human-centric representation of the individual who is expected to take ownership over its own self—this self-mastery thereby sanctioning the exercise of mastery over others who are incapable of such self-legislation. The classical liberal vision of moral autonomy imagines human rationality in the role of sovereign commander of the self and of animals and machine entities. Theories that filter conceptions of cognition through mirror metaphors, such as measuring self-awareness through the mirror recognition test or theorising empathy through mirror neurons, emphasise atomistic models of the self as autonomous and bounded.⁸ This perspective privileges the production of knowledge that is human-centred, producing knowledge that stresses human mastery over non-human entities, including

7 Val Plumwood, *Feminism and the Mastery of Nature* (New York: Routledge Press, 1993), 41.

8 Willett, *Interspecies Ethics*, 6.

the use of animals in scientific testing.⁹ Within this human-centric framework, automation and A.I. are viewed in terms of human autonomy and oversight over non-humans. For instance, applications of A.I. today that provoke notions of speed, quantity, flexibility, scalability and extensity are portrayed as judicious human interventions navigating the contingencies of unpredictable change.

Historically, advocacy for the rights and welfare of those deemed to lack reason (and thus considered non-rational) arose amongst liberal sentimentalists who argued that protection of non-rational dependents should be extended not based on rational capacities and claims to freedom and equality but on the shared capacities for sentience, sympathy, and suffering. As the argument goes, the non-rational—*e.g.*, women, animals and slaves—are vulnerable and are owed limited human protection and sympathy. Liberal sentimentalism (and its contemporary variants like the Capabilities approach) retools classical liberalism's aim of protecting individual freedom while importing 18th and 19th-century notions of social equality in terms of minimal capabilities that are extended to those previously deemed vulnerable and guaranteed by the state.¹⁰ In contemporary research on animal and human cognition, scientific discourse and liberal sentimentalism dovetail. Overturning the classical liberal emphasis on rationality, Jonathan Haidt argues that there is scientific basis for viewing reason as the "slave of the passions" and that moral feelings (or intuitions) and empathy play pivotal roles in understanding human morality.¹¹ Sentiment, not rationality, is the driving force of human cognition as well as the common denominator linking humans and non-humans. Liberal concepts of human agency, even those that reject possessive individualism, tend to assess the worth of non-humans in terms of human-centric standards that do not overturn the assumption that what makes non-humans worthy of moral consideration is their commonality and resemblance with humans.

In contemporary A.I. ethics debates, the dominant formulation frames artificial intelligence in terms of human oversight and human power over non-humans (*e.g.*, robots¹² and machine intelligence¹³). For instance, while some A.I. ethicists argue that robots should be slaves that we own and never viewed

9 For a scathing criticism of this view, see Katerina Kolozova, *Capitalism's Holocaust of Animals: A Non-Marxist Critique of Capital, Philosophy and Patriarchy* (UK: Bloomsbury Academic, 2019).

10 C. Willett, *Interspecies Ethics* (New York: Columbia University Press, 2014), 36.

11 Jonathan Haidt, *The Happiness Hypothesis* (New York: Basic Books, 2006), 17.

12 The word "robot" comes via Old Czech from the Old Church Slavonic *rabota*, meaning "servitude," and from *rabu* or "slave." See the etymology of the word on <https://www.etymonline.com/search?q=robot>

13 In 2019, Lee Se-dol, a master player of the Chinese strategy game Go and the only human to ever beat AlphaGo developed by Google's Deepmind, decided to retire due to the rise of artificial intelligence that "cannot be defeated". "Go Master Quits Because AI 'Cannot be Defeated.'" BBC News, November 27, 2023. <https://www.bbc.com/news/technology-50573071>

as persons or companions,¹⁴ others disagree with this vision of robots as nothing more than slaves/instruments, arguing instead that robots, machines, nonhuman animals, and even extraterrestrials might be conceived as an “other” for which humans may be morally responsible. In this view, humans may have moral obligations to robots based on moral patience, a sentimentalism-based theory that non-humans are vulnerable and are owed limited human protection and sympathy:

Developing and debating the rights of robots does not necessarily take anything away from human beings and what (presumably) makes us special; it offers a critical tool for doing work in moral theory, making available new opportunities for us to be more precise and scientific about these distinguishing characteristics and their limits.¹⁵

Thus, regardless of whether it is classic or sentimentalist, liberal positions reinforce some degree of human exceptionalism. From self-driving cars and artificial neural networks to advertising and earthquake predictions, humanity is portrayed as beings who take control of the tools that will enable them to navigate uncertainty and change. A human-centric narrative that many find appealing depicts “cutting-edge” technologies that are harnessed by the power of human ingenuity involving humanitarian narratives (e.g., “Human Rights by Design”), practices for “the benefit of humanity,” the protection of human rights and democratic governance, and retaining “meaningful human control” in order to find ways to instrumentalise and exploit non-human potentialities while also shielding humanity from risks. Such a vision narrates a future in which humans govern unpredictability through the instrumentalisation of their technical/technological rationality and their normative and norm-making capacities. Governance is conceptualised as a relational mode of ordering, arranging, and overseeing other biological and technical entities, retaining human control of unpredictable technological changes that threaten to untether humans from their traditional position as governors. Technologies are instrumental, and lesser beings and machines remain tools of their human masters. Drawing on theories of human nature and moral autonomy that posit the sovereignty of human rationality, the onto-politics of “centring” the human privileges the production of knowledge that is overseen by humans and prioritises human mastery over non-human entities and justifies practices that lead to the instrumentalisation of the “non-human”. Governance of human/non-human relations is used to manage issues pertaining to the global regulation of economic, political, and social processes¹⁶.

14 J. Bryson, “Robots Should Be Slaves,” in *Close Engagements with Artificial Companions: Key Social, Psychological, Ethical and Design Issues*, (ed.) Y. Wilks (Amsterdam: Benjamins Publishing Company, 2010), 1–12.

15 David J. Gunkel, *Robot Rights* (Massachusetts: MIT Press, 2018), 12.

16 For a critique of this worldview in international relations scholarship, see David Chandler, Franziska Müller, & Delf Rothe (Eds.), *International Relations in the Anthropocene: New Agendas, New Agencies and New Approaches* (Basingstoke: Palgrave MacMillan, 2021).

In efforts to respond to the challenges of governing emergent technologies, scientific discourses merge with human-centrism. The onto-politics of human-centrism “draws together some ubiquitous features of late modernity—uncertainty, power, knowledge, technology, and rapid, destabilizing change—and renders them coherent, orderly, and controllable. It is a simple fable for a complex age, one that promises predictability when the future is uncertain and renders uncertainty governable without friction.”¹⁷ Threats and risks are managed by normative constructions of human control and containment of risk, and scientific self-regulation is established as being the main vehicle for achieving a beneficent human future. Data-driven scientific imaginaries portray data science as sets of techniques and methods, but also as a powerful force that must be harnessed and made to serve human needs:

It is in this mutual relation between expert knowledge and the epistemic authority of states that imaginaries of big data are having performative effects [...] the force of big data imaginaries is not simply about whether data produced by private technology corporations has been or will be used to make official statistics. Rather, it is how such imaginaries are simultaneously reconfiguring cultures and practices of data production on the part of both statistical professions and their institutes. To speak of dominant imaginaries then is to underscore that they not only shape what is thinkable but also the practices through which actors perform them.¹⁸

The onto-politics of “emergent governability” prioritises human involvement in the critical functions of technology and shapes how sciences/scientists and laws/lawmakers envision and apportion roles and responsibilities in managing global problems. The principle of “emergent governability” has served as a normative tool for the production, implementation, and regulation of human-friendly or so-called “beneficial” emergent technologies. The “Asilomar imaginary” of emergent governability and its idea of “beneficial intelligence” has been developing since the 1975 conference in Asilomar California, when scientists and public officials assessed the risks of biotechnologies and discussed standards for the governance of bioindustries.¹⁹ Through the discourses of “emergent governability” and “beneficial intelligence,” the governance of artificial intelligence is asserted as the human mastery over non-human entities and is being used to manage issues pertaining to the global regulation of economic, political, and social processes, “calculations and tactics that allow the exercise of this very specific albeit complex form of power, which has as its target population, as its principal form of knowledge, political economy,

17 J. B. Hurlbut, “Remembering the Future: Science, Law, and the Legacy of Asilomar,” in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, eds. S. Jasanoff and S-H. Kim (Chicago: University of Chicago Press, 2018), 147.

18 Ruppert, Evelyn. *Sociotechnical Imaginaries of Different Data Futures: An Experiment in Citizen Data* (Rotterdam: Rotterdam University, 2018), 16, 18–19.

19 P. Berg, “Asilomar 1975: DNA Modification Secured,” *Nature*, no. 455 (September 2008): 290–291.

and as its essential technical means, apparatuses of security.”²⁰ The future of stability is understood as the management of unpredictability and uncertainty through the coalescing of institutional governance and technologies of governance, namely the workings of the nation and interactions between nation-states. The “nation” is imagined to be the most “legitimate” actor on the world stage,²¹ where a “widely shared sense of legitimacy”²² can be found for the preservation of an ordered human future. This was the model of international political cooperation formed after the Second World War, which was founded on this imagined idea of political stability in which the cooperation of nation-states solved international problems like inter- and intra-state conflict.

Over time however, the centrality of the nation-state has dwindled with the emergence of global discourses that imagine legitimacy in terms of supra- and trans-national expert institutions that can oversee and respond to real-time global problems. The figures of globalism and emergent governability are based on a supranational model of sociotechnical surveillance and response. Circumventing rather than maintaining boundaries extends the jurisdictional power of surveillance systems (and the power of those that design and implement them) and leads to the emergence and consolidation of a new information infrastructure, that is, a planet-wide technical system of informational capture and control that are not territorially assigned but technologically constructed.²³ Globalism thus transforms the “nomos of the earth” from the physical space of national territory to a conglomeration of global flows that people inhabit and shape and that, in turn, constrain the spectrum of future actions.²⁴ The socio-technical imaginary²⁵ of globalism and emergent governability prioritises “meaningful human control” and human oversight over human/non-human co-productions. The discourse of governance shifts from

20 M. Foucault, “Governmentality,” in *The Foucault Effect*, ed. G. Burchell, C. Gordon and P. Miller (Chicago: University of Chicago, 1991), 102.

21 Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 1991).

22 Charles Taylor, *Modern Social Imaginaries* (Durham: Duke University Press, 2003).

23 See Philip Howard, *Pax Technica: How the Internet of Things May Set Us Free or Lock Us Up* (New Haven: Yale University Press, 2015), 145–146.

24 Clark A. Miller, “Globalizing Security: Science and the Transformation of Contemporary Political Imagination,” in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, eds. S. Jasanoff and S.H. Kim (Chicago: University of Chicago Press, 2018), 278–9.

25 Jasanoff and Kim define *socio-technical imaginaries* as “collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology”. Socio-technical imaginaries serve as vehicles by which to understand how “scientific and technological visions enter into the assemblages of materiality, meaning, and morality that constitute forms of social life” S. Jasanoff and S.H. Kim, “Future Imperfect: Science, Technology, and the Imaginations in Modernity”, in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, eds. S. Jasanoff and S.H. Kim (Chicago, University of Chicago Press, 2018), 4.

being outrightly conceptualised in terms of the centrality of humans (in accordance with classical modernist and rationalist theories of human intelligence) to the emergence of a precarious and risky governability that is conceived in terms of “planetary governance,” a broader and more complex model of shared existence in the Anthropocene characterised by the entanglement of humanity and nature.²⁶ The notion of nature is a complex field of multiple meanings, hierarchies, and exclusions where racial, sexual, ethnic, and other differences have been cast in terms that distinguish higher forms of humanity from lesser ones deemed to lack some degree of rationality or cultivation. The master/slave dichotomy at the heart of this version of human control reproduces a cluster of other familiar dualisms: mind/body, self/other, culture/nature, human/animal, human/machine, male/female, coloniser/colonised.²⁷ This logic of mastery/subjugation views domination as natural and appropriate, and within this model of control, “the multiple, complex cultural identity of the master [is] formed in the context of class, race, species and gender domination. [...] [T]he assumptions in the master model are not seen as such, because this model is taken for granted as simply a human model”.²⁸ For many, the concept of the Anthropocene is said to fundamentally challenge this strongly human-centric paradigm:

[T]he Anthropocene is understood to pose fundamentally different questions about how we can know and how we can govern without the certainties and signposts of modernity. In this sense, the declaration of the Anthropocene marks a very different moment to the Club of Rome’s report that launched concerns of environmentalism and over the exhaustion of natural resources in 1974.²⁹

Emergent governability thus shapes not only how scientists and lawmakers envision their own roles and responsibilities in managing global problems but also explains why human-centrism and in-the-loop frameworks posit scientific self-regulation as key to a future benevolent to humans in which the threats and risks of artificial intelligence are managed and reduced by normative constructions of human control and containment of risk (otherwise known as “meaningful human control”—that is, the degree of human involvement in the critical functions of technology).

26 For example, see Chandler *et al.*, 2021.

27 Nandita Biswas Mellamphy, “Challenging the Humanist Genre of Gender: Post-humanisms and Feminisms,” in *Different Voices: Gender and Post-humanism*, eds. Paola Partenza, Ozlem Karadag, and Emanuela Ettore (Leiden: Brill Publishers), 15–27.

28 Plumwood, 5, 22.

29 Chandler, 8.

3. The Onto-politics of “De-centring”: Post-humans On the Loop

The onto-politics of “centring” the human involves presuming the mastery model of agency and of governance (*i.e.*, “command and control”), that is, self-legislation and legislation of others based on hierarchy, centralisation, universalisation and linearity. The concept of gender inherited from this legacy is dualistic and hierarchical as well. The hierarchy of humans and non-humans expands into a conceptual network of hierarchies connecting various other hierarchies together, such as the human domination of nature, male domination over females, the master’s domination over the slave, and Reason’s domination of the body and emotions.

The need for an alternative perspective arises when understanding the limitations of the onto-politics of human-centrism. While the Anthropocene narrative of “centring the human” has been a dominant socio-technical imaginary, counter-narratives are emerging that challenge, decentre, and overturn human-centrism. Turning away from subjects of power to focus on *objects* of governance, the onto-politics of “de-centring” the human pursues and adopts non-linearity, non-universality, and non-rationality, as well as *autopoiesis* (self-making) and adaptation, *homeostasis* (interdependency) and responsiveness, as well as *sympoiesis* (making altogether) and entanglement. The onto-politics of de-centring rejects the onto-politics of strong human-centrism (involving narratives of progress and universality as well as the modernist binary divide of culture and nature) in favour of views that conceive of “the human subject as relationally embedded or entangled rather than as an autonomous rational subject distinct from the world.”³⁰

Human-centred designs imagine humans as distinct individual subjects, as consumers with the power to choose and as users of goods, services, and technologies. Human-centric and user-centric design has been wedded to neoliberal, capitalistic economic models where the individual is equated with the consumer-user.³¹ Until recently, the field of HCI (Human Computer Interfaces) was dominated by a human-centred user-based paradigm based on functionalist, rationalist, industrialist—not to mention extractive and exploitative—humanistic values. HCI scholars are seeking to “de-centre” human-centred design by turning to post-humanist theories that call out human exceptionalism and portray human agency as interconnected to non-human agencies/sentience within assemblages that humans participate in but do not control. In particular, Sustainable Human Computer Interaction (SHCI) has paid attention to co-constitutive relationships between humans and non-humans, and more-than-human research has pursued “post-capitalist” and “post-anthropocentric” orientations in an effort to

30 Chandler, 23.

31 Laura Forlano, “Post-humanism and Design,” *She Ji: The Journal of Design, Economics, and Innovation*, 3 (1): (2017): 16–29. <https://doi.org/10.1016/j.sheji.2017.08.001>.

resist and overturn the dominant human-centric paradigm.³² HCI scholars have drawn on different theoretical orientations like Science and Technology Studies (STS) and Actor-Network Theory (ANT) that approach complex socio-technical systems in terms of networks that involve human and non-human actors,³³ object-oriented ontologies that put "things at the centre of being,"³⁴ as well as feminist new materialisms³⁵ and critical feminist post-humanisms³⁶ that expand "the circle of moral concern, extending subjectivities beyond the human species."³⁷ HCI scholars have seen the need for ontological repositioning.³⁸

While human-centrism asserts that the human is the centre of all things and non-humans lack various uniquely human capacities like language, reason, tool-use, temporal sense, and awareness of morality,³⁹ philosophical and critical post-humanisms seek to challenge the anthropocentric assumptions that have been inherited from the legacies of humanistic traditions by questioning human exceptionalism and by expanding the realm of moral and ethical concern to non-human forms.⁴⁰ Dominant human-centric epistemologies have ignored the agential potentials of the non-human (including animals, plants, minerals, bacteria, objects, machines, ecosystems, and atmospheres). This exclusion has led

32 Cayla Key, Cally Gatehouse and Nick Taylor. "Feminist Care in the Anthropocene: Packing and Unpacking Tensions in Post-humanist HCI," in *Designing Interactive Systems Conference* (New York, ACM). <https://doi.org/10.1145/3532106.3533540>

33 See Bruno Latour, *Reassembling the Social: An Introduction To Actor-Network Theory* (Oxford New York: Oxford University Press, 2005). Also see "Where Are the Missing Masses?: The Sociology of a Few Mundane Artifacts," in *Shaping Technology/Building Society: Studies in Sociotechnical Change* eds. Wiebe E Bijker and John Law (Cambridge: MIT Press, 1992), 225–258.

34 Ian Bogost, *Alien Phenomenology, or What It's Like to Be a Thing* (Minneapolis: University of Minnesota Press, 2012), 6.

35 See, for example, Donna Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1991); and *When Species Meet* (Minneapolis: University of Minnesota Press, 2007). Also see Karen Barad, "Post-humanist Performativity: Toward an Understanding of How Matter Comes to Matter," *Signs: Journal of Women in Culture and Society* 28, 3 (2003): 801–831; and "Quantum Entanglements and Hauntological Relations of Inheritance: Dis/continuities, SpaceTime Enfoldings, and Justice-to-Come," *Derrida Today* 3, no. 2(2010): 240–268.

36 See for example, R. Braidotti, *The Post-human* (Massachusetts: Polity, 2013). María Puig de la Bellacasa. *Matters Of Care: Speculative Ethics in More Than Human Worlds* (University of Minnesota Press, Minneapolis, 2017).

37 Jeffrey Bardzell, Shaowen Bardzell, and Ann Light. "Wanting To Live Here: Design After Anthropocentric Functionalism," in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (New York: Association for Computing Machinery, 2021), 1–24. <https://doi.org/10.1145/3411764.3445167>

38 Key 2022.

39 Christopher Peterson, *Monkey Trouble: The Scandal of Post-humanism* (New York: Fordham University Press, 2018).

40 Smart Alan and Josephine Smart, "Multispecies Ethnography," in *Post-humanism* (Toronto, ON: University of Toronto Press, 2017), 43–64.

to a narrow conception of political community, resulting in significant policy gaps (e.g., limited inter-governmental collaboration efforts to tackle climate change or mass species extinction). Moreover, some argue that machines gain greater importance in the era of late-stage capitalism when they should be seen as meaningful social actors. Instead of viewing machines and objects as “dead labour” and working humans as “living labour,” the ontological boundaries should be blurred by recognising humans and machines as hybrids of “living” and “dead” elements.⁴¹ The term “post-humanism,” as such, is deployed to “cope with the urgency for the integral redefinition of the notion of the human, following the ontological as well as scientific and bio-technological developments of the twentieth and twenty-first centuries.”⁴²

Against this backdrop, post-humanism:

names a historical moment in which the de-centring of the human by its imbrication in technical, medical, informatic and economic networks is increasingly impossible to ignore, a historical development that points towards the necessity of new theoretical paradigms (but also thrusts them on us), a new mode of thought that comes after the cultural repressions and fantasies, the philosophical protocols and evasions, of humanism as a historically specific phenomenon.⁴³

Described “as a continuing critique of humanism that drops the starker anti-humanist overtones,”⁴⁴ philosophical post-humanisms present post-humanism as a new way of rethinking the relationship between humans and non-humans. To emerge from environmental crises, and fix broken ecosystemic relations and crumbling institutions, the argument is that humans must repair their relationships with the biosphere by recognising non-human beings’ capacity for agency and acting to limit their exposure to harm. Philosophical post-humanisms thus champion networks of caring relations and ecologies of repair,⁴⁵ as well as eco-centric approaches that call for the removal of human exceptionalism, which will reconnect humans with nature.⁴⁶

41 Magdalena Zolkos, “Life as a Political Problem: The Post-human Turn in Political Theory,” *Political Studies Review* 16, no. 3 (April 21, 2017): 202. <https://doi.org/10.1177/1478929917720431>, 202.

42 Francesca Ferrando, “Post-humanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: Differences and Relations,” *Existenz* 8, no. 2 (2013): 26.

43 Cary Wolfe, *What Is Post-humanism?* (Minneapolis: University of Minnesota Press, 2010), xv–xvi.

44 Anne Phillips, *The Politics of the Human* (Cambridge: Cambridge University Press, 2015), 111.

45 Gustavo Blanco-Wells, “Ecologies of Repair: A Post-Human Approach to Other-Than-Human Natures,” *Frontiers in Psychology* 12 (April 8, 2021): 2. <https://doi.org/10.3389/fpsyg.2021.633737>.

46 Aura-Elena Schussler, “Post-humanism and Ecofeminist Theology: Toward a Nondualist Spirituality,” *Journal for the Study of Religions and Ideologies* 19, no. 57 (2020): 35.

By contrast, medical post-humanism coming from the medical humanities (and tied to the history of transhumanism and futurism⁴⁷) considers how humanity has already been changed and will continue to be altered by medical and technological interventions in a future populated by enhanced or hybrid humans.⁴⁸ In an effort to challenge the onto-politics of humanism, contemporary feminist trans-humanism claims to offer a post-gender and gender-liberationist argument that through the application of neuro-technology, bio-technology, and assistive reproductive technologies, gendering can be eliminated and human potential can truly be realised. Trans-humanism, which is a term said to have been coined in the 1950s by Julian Huxley to mean the transitional human who is moving beyond its human limits, is a movement that seeks to transform humans through technological augmentation to invert the humanistic hierarchy of human over machine and liberate humans from gender-oppression. Sometimes touted as "fourth-wave feminists" "defined by technology" and even "post-feminists," feminist trans-humanists retain the first-wave feminist assumption that mind is a superior path to liberation than body, which is inferior and limiting; and that "technology" is the instrument, the means towards the end of transforming the human. Retaining the humanist dualism favouring liberation through mastery, technological progress and exceptionalism, the trans-humanist argument for gender-liberation ultimately and ironically affirms the humanist logic of control. Trans-humanism and liberal feminism both have intellectual roots in Enlightenment positivism and rationalism and technological progressivism. Like its historical predecessor, liberal sentimentalism, trans-humanism shares with liberal feminism a deep commitment to universality framed as "the well-being of all sentience."⁴⁹ In this case, it is the shared capacity to feel, and not the capacity to think rationally, that undergirds this brand of sentimentalist trans-humanism. What started out as discontent with the onto-politics of classical human-centrism still leads back to anthropocentrism and humanistic assumptions.

Alternatively, critical post-humanisms (including critical feminist post-humanisms) are concerned with deconstructing humanism and speculating about what it means to be human in the age of globalisation, climate change, increasing automatisations, and late-stage capitalism.⁵⁰ Critical feminist post-humanisms have been an important resource for gaining alternative perspectives on the tensions between the politics of "de-centring" and of "re-centring the human." Broadly referring to theories influenced variously

47 See for example Patrick W. McCray, *The Visioneers: How a Group of Elite Scientists Pursued Space Colonies, Nanotechnologies, and a Limitless Future* (Princeton: Princeton University Press, 2012).

48 Anna McFarlane, "Medical Humanities," *Critical Post-humanism Network: Genealogy of the Post-human*, August 1, 2017, <https://criticalpost-humanism.net/medical-humanities/#:~:text=By%20using%20medicine%20as%20a,possibilities%20of%20a%20critical%20Post-humanism>

49 Humanity Plus "Transhumanist Declaration," <http://humanityplus.org/philosophy/trans-humanist-declaration>. Accessed February 24, 2023.

50 Stefan Herbrechter, "Critical Post-humanism," in *Post-human Glossary*, eds. Rosi Braidotti and Maria Hlavajova (London, UK: Bloomsbury Academic, 2018), 94.

by Kantian critique, critical theory, post-colonialism, feminism, and post-structuralism that criticise imagined futures that embrace the assimilation of the human into the suprahuman (e.g., extropianism and transhumanism).⁵¹ Critical feminist post-humanists argue for a rejection of the principle of human mastery in favour of conceptualisations that bridge divides between humans and non-humans. Reminiscent of liberal sentimentalism, critical post-humanism pursues mapping, sensing, and hacking of the similarities between human and nonhuman agencies, embodiments and subjectivities. Critical post-humanisms have made significant efforts to contest philosophical dualisms and have expanded thinking about life, intelligence, and agency beyond the figure of the human, looking to multiplicity, difference, interconnection and affect to ground new political ontologies. Critical feminist post-humanisms, in particular, have sought to deprioritise human-centric assumptions of mastery and hierarchy, instead emphasising co-evolution and/or co-individuation of humans and non-humans (e.g., affirming compatibilities and affinities between human animals, non-human animals and machines). Post-humanisms seek to deprioritise human-centrism, reject atomism, and underscore the affinities (rather than the differences) between human animals, non-human animals, and machines. Humans are viewed as co-producing with non-humans, rather than as ontologically superior to them. Prioritising connectionism as a way of deprioritising humanism while simultaneously avoiding pessimistic anti-humanism, these critical feminist post-humanisms strive to transform the “human” into an open-ended category and to re-conceptualize it as a product of ongoing processes of collective bio-socio-technical interactions. This vitalist interconnectionism avoids human-centric species-ism and favours multi-species-ism and interspecies-ism.⁵² Contrary, however, to humanists and trans-humanist feminists who instrumentalize non-humanity and even seek to accelerate the technological transformation of the human, post-humanist feminisms de-centre the human, making it cede its historical ties to the dialectics of domination and transcendence. Whereas the humanistic conception of gender is strongly human-centred, binary, and hierarchical, the post-humanistic alternative pursues the *undoing* of human-centrism in an effort to open-up multiple pathways and possibilities of relationality between humans and non-humans.

Drawing together anti-humanism’s rejection of anthropocentrism (i.e., of Man as a universal ideal) and post-structuralist feminism’s critique of phallogocentrism, critical feminist post-humanisms, in embracing new materials and materialisms as the basis for displacing humanism, claim to be “post-

51 Debashish Banerji and Makarand Paranjape, “The Critical Turn in Post-humanism and Post-colonial

Interventions,” in *Critical Post-humanism and Planetary Futures* (India: Springer, 2016), 2.

52 See for example, Willett 2015; Bellacasa 2017; and Christine Daigle and Terrance H. McDonald (eds.), *From Deleuze and Guattari to Post-humanism: Philosophies of Immanence* (London: Bloomsbury Academic, 2022).

anthropocentric." Calling for a post-humanities to develop as a "humanities without the human" alongside a "feminism without gender," some critical feminist post-humanists argue that instead of the term Anthropocene, we should consider our present epoch as "post-natural," that is, beyond the naturalism of the nature/culture dichotomy.⁵³ Critical feminist post-humanisms reject gender essentialism and endeavour to map, sense, and hack into "notions of sex, gender and sexuality as they traverse the borders of internality and externality, revealing their entanglement in a complex web of sociocultural meanings and biological imperatives."⁵⁴ Instead of negating gender, such post-humanist feminisms seek instead to experiment with and even simulate gender.⁵⁵ Whereas within the onto-politics of human-centrism, gender is conceptualised as binary and hierarchical (in which humans are central and superior to non-humans, and males are central and superior to females), in the onto-politics of post-humanism, gender is theorised as non-binary and power is meant to be shared between humans and non-humans. While anti-humanist, post-structuralist, and post-humanist feminisms have opened up avenues for de-centring the human and embracing the non-human, many point out that they remain troubled by gender despite the rejection of gender essentialism.⁵⁶ In an effort to deterritorialise gender, some scholars warn that post-humanism does not posit a genderless body: "sex/gender, race, sexuality is not a difference from other bodies, but is a difference that emerges from within the individuating body as material discursive process."⁵⁷

Despite many appealing features of critical feminist post-humanisms, they appear to continue to preserve commitments to human-centrism, however weakly. While such post-humanisms might de-centre the human, they have not shed anthropocentrism completely because they do not sever or abolish the binary/dualistic distinctions between "human" and "non-human." Critical feminist-inspired post-humanisms seek to displace humanist premises by inverting the logic of dualism and colonisation at their core. Instead of privileging mind over body, the body is prioritised, becoming the locus of sentience and connection to other bodies, this interconnectivity spilling beyond the boundaries of human

53 Cecilia Åsberg, "Feminist Post-humanities in the Anthropocene: Forays into The Post-natural," *Journal of Post-human Studies* 1, no. 2 (2017): 185–204.

54 Elden Yungblut, "Sex in Post-human Futures: Rethinking Gendered Embodiment in the Anthropocene," *Gnosis* 17, no. 1 (2018): 7.

55 Kim Toffoletti, "Catastrophic Subjects: Feminism, the Post-human and Difference." *Thirdspace: A Journal of Feminist Theory & Culture* 3, no. 2 (2004).

56 See for example, Francesca Ferrando, "Is the Post-Human a Post-Woman?—Cyborgs, Robots, Artificial Intelligence and the Futures of Gender: A Case Study," *European Journal of Futures Research* 2, no. 1 (2014): 1–17, <https://doi.org/10.1007/s40309-014-0043-8>. Nicole Falkenhayner, "The Ship Who Sang: Feminism, the Post-human, and Similarity," *Open Library of Humanities* 6, no. 2 (2020), <https://doi.org/10.16995/olh.598>.

57 Silvia Gherardi. "If We Practice Post-humanist Research, Do We Need 'Gender' Any Longer?" *Gender, Work & Organization* 26, no. 1 (2019), <https://doi.org/10.1111/gwao.12328>.

subjects into new realms of non-human subjectivity. But the embroilment with (liberal) sentimentalism remains, as does the potential for perpetuating a weak onto-politics of human exceptionalism. The post-human politics of de-centring the human cannot be considered “post-anthropocentric” (implying the abolition of anthropocentrism), though it can be considered “anti-anthropocentric.” Remaining wedded to conceptions of relationality, vitalism, and connectionism does not abolish human-centric preoccupations with being(s), subjectivity, agency, and embodiment, concepts that are intractably “human-all-too-human.” From a conceptual point of view, critical feminist post-humanisms could be a kind of “non-humanist humanism”,⁵⁸ and for this reason, they can be considered a more standard form of post-humanism.

4. Abolishing the Human/Non-Human: Humans *Out of the Loop*

What would a “post-anthropocentric” post-humanism look like? This is where most contemporary thinking fails to provide an adequate framework. It would be the task of speculative rather than normative thinking to conceptualise post-anthropocentrism since speculation would have to be disconnected from previous human-centred approaches (both strong and weak types). A “post-anthropocentric” post-humanism would, I argue, entertain possibilities that are not defined by the resonances and/or differences between humans and non-humans. In distinction with previous standard post-humanisms, this “human out-of-the-loop” model could be provisionally called a “non-standard” post-humanism, even a “speculative post-humanism” based on a “disconnection thesis” that humans should not be conceptualised in terms personhood at all (that is, the presence or absence of some essential human property, or as “Lockean or Kantian persons”), but rather as “an emergent disconnection between individuals [that] should not be conceived in narrow biological terms.”⁵⁹ Instead of positing any anthropocentric baseline (not even a weakly constrained one), the disconnectionist model would begin with the assumption that “our current technical practice could precipitate a non-human world that we cannot yet understand, in which ‘our’ values may have no place.”⁶⁰ Here, “human” would not refer primarily to the human-centric portrait equated with biological and cognitive embodiments (*i.e.*, neither as a “real” organism nor as the phenomenological “self” that has subjective experiences), but to a view that is disconnected from and independent of any human-centrism, somewhat akin to a “queer inhumanity”⁶¹ that is incommensurate and incommensurable with existing taxonomies, valuations,

58 See William V. Spanos, “Post-humanism in the Age of Globalization: Rethinking the End of Education,” in *Toward a Non-Humanist Humanism* (Albany: State University of New York Press, 2017).

59 David Roden, *Post-human Life: Philosophy at the Edge of the Human* (London: Routledge, 2015), 105.

60 Roden, 125.

61 José Esteban Muñoz, “Theorizing Queer Inhumanisms: The Sense of Brownness,” *GLQ: A Journal of*

and modes of relationality. From this point of view, standard post-humanisms belie a crypto-human-centrism that turns queerness's non-standard potential for post-anthropocentrism against itself, returning it to a state of weak anthropocentrism. Instead, the queer labour of a veritable post-anthropocentric conception of gender demands thinking not in terms of *relation*, but rather *non-relation* and *disconnection* from standard modes of being and thinking.

Object-Oriented Feminisms (OOF) and Xeno-Feminisms (XF) are two contemporary discourses that, like standard post-humanisms, are based on the affirmation of techno-materialities, anti-naturalism and inter-sectionality, but unlike the standard post-humanisms, both OOF and XF cut ties with ideals like subjectivity and agency, focusing instead on non-standard notions of withdrawal (without emergence), objects (without subjects), alienation (without agency) and gender-abolition (instead of gender-essentialism or gender-performativity). For example, Object-Oriented Feminisms are critical of standard Object-Oriented Ontology (OOO) for remaining silent about the tensions between feminism (the critique of female objectification) and object-orientation. OOO privileges liveliness and connectivity, which is problematic "because the imperative to connect is detrimental to individuals who suffer from the over-connection compulsions of neoliberal subjectivity."⁶² The withdrawal of the object—its "self-contained-ness" is viewed as a kind of objection *qua* resistance: "OOO's conception of objects as fundamentally withdrawn and self-contained resonates with feminist objects that resist us, and the feminist notion that as objects, we resist"; but instead of connection, what is offered is commonality and continuity: "our common status as matter makes way for continuity between all objects, whether human or nonhuman, organic or inorganic, animate or inanimate."⁶³ Building on Laboria Kubonik's "Xeno-Feminist Manifesto," Xeno-Feminism (XF) names four technological principles of *circumnavigation of gatekeepers, repurposing, scalability, and intersectionality*: "Through these principles, the master's tools can dismantle the master's house."⁶⁴ Offering a problematic appropriation of Audre Lorde's famous statement that the epistemological tools inherited by the histories of colonialism and racism could not be used to dismantle oppression against Black people, XF's suggestion that the "master's tools *can* dismantle the master's house" threatens to extend mastery as the driving force of XF's technological mandate. While such post-humanisms go beyond trying to de-centre agency and strongly renounce the humanistic ontotheology at the heart of the onto-politics of human-centrism, the attempt to bring about new configurations of relationality/continuity based on alter-ontologies loosens anthropocentrism but does not eliminate it altogether. Ultimately, Queer, Xeno-Feminist, and Object-Oriented Feminisms are

Lesbian and Gay Studies 21, no. 2-3 (2015): DOI 10.1215/10642684-2843323.

62 Katherine Behar, "Facing Necrophilia, or 'Botox Ethics,'" in *Object-oriented Feminism*, ed. Katherine Behar (Minnesota: University of Minnesota Press, 2016), 26.

63 Behar, 19.

64 Helen Hester, *Xeno-Feminism Theory Redux* (Cambridge: Polity Press, 2018), 137, 97-8.

in danger of reverting to the “standard” post-humanisms insofar as they do not abandon connectionism (whether strong or weak) prioritising relation, communication, continuity, and exchangeability, thus operationalising the age-old standard of defining at least two terms and the differences that connect them.⁶⁵ “These procedures of making equal, calculable and knowable are articulated in processes of converting worlds into the grammars of the human”; [...] “an end of the human would be nothing less than abolitionist.”⁶⁶ As Liu reminds us: abolitionism does not equal post-humanism.

Rather than recuperating abolitionist and de-colonial thought for a connectionist post-humanism, a post-anthropocentric perspective is concerned with thinking about how to incapacitate the conceptual and structural apparatus of relation that makes distinction possible in the first place. Post-anthropocentrism, it would seem, requires reckoning with the end of the human/non-human dichotomy. Disconnection and non-relation, in other words, become important concepts to consider when making claims about post-anthropocentrism. “[T]he continuing damage of the human as an invention of the Western philosophical tradition” suggests “that its orders of transcendence, overcoming and resolution proceed in philosophies of relation and difference that lacerate-into-rivenness and vanish-by-equivalency a structural violence that is at once constitutive and irreparable. [...] Where abolitionist thought elicits an end of a carceral paradigm which the post-human may also inhabit, post-humanism may leave intact the racial, sexual, colonial, ontological underpinning the human.”⁶⁷

What has been called “post-anthropocentrism” by standard post-humanisms ends up getting caught in the backdraft of anthropocentrism, however weakly. Post-anthropocentrism strongly implies disconnection with human-centrism; without such a move, declarations of so-called “post-anthropocentrism” end-up being caught in the endless differential circuits of human-centrism. Along with disconnection and non-relation, post-anthropocentrism entails a rethinking of incommensurability, particularly the incommensurability of thinking post-anthropocentrically (since speculative post-humanism permits speculating what it is impossible to know). Standard post-humanism prioritises narratives that privilege inter-species co-evolution and co-production, emphasising connectionism and framed around convergences between human/non-human, and this connection is what retains vestiges of anthropocentrism. While standard post-humanisms challenge the modernist, humanistic portrait of the human as master based on myths of rationality and progress, what they offer as alternatives—

65 See François Laruelle, *Philosophies of Difference: A Critical Introduction to Non-Philosophy*, trans. Rocco Gangle (UK: Bloomsbury Academic, 2011).

66 Michelle Liu, *Com-posing ‘Abolitionist≠Post-humanism’: Notes on Incommensurability, Incomputability and Incognita Syn-aesthetics*, MA dissertation, Western University, 2020), 8. <https://ir.lib.uwo.ca/etd/7016>.

67 Liu, 5. Also see Frank B. Wilderson, *Red, White & Black Cinema and the Structure of U.S. Antagonisms* (Durham: Duke UP, 2010), 36.

autopoiesis (self-creation based on non-linearity and myths of adaptation), *homeostasis* (correlationism based on myths of responsiveness), and *sympoiesis* (entanglement or "becoming with" based on myths of radical openness)—de-centre and shift power away from strongly anthropocentric onto-politics but retain commitments to discourses of emergent governability.

The onto-politics of "de-centring the human" does not go far enough to overcome the binary and dualistic model of the human agent inherited from Humanism. De-centring the "human/non-human" binary is not the same thing as abolishing distinctions between human and non-human. Standard post-humanisms, as such, fail to sustain possibilities that are not defined by the affinities and/or differences between "humans" and "non-humans." Non-standard post-humanisms would focus on refusing personalism and relationism by abolishing the human/non-human conceptual connection/divide. In disconnecting from and conceptually eliminating human/non-human relationalities, the starting point of non-standard post-humanisms is the end of the human as we know it.

References

- Anderson, Benedict. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso, 1991.
- Åsberg Cecilia. "Feminist Post-humanities in the Anthropocene: Forays into The Postnatural," *Journal of Post-human Studies* 1, no. 2 (2017): 185–204.
- Banerji, Debashish and Makarand Paranjape. "The Critical Turn in Post-humanism and Post-colonial Interventions." *Critical Post-humanism and Planetary Futures*. India: Springer, 2016.
- BBC News. "Go Master Quits Because AI 'Cannot be Defeated'." BBC News, November 27, 2023, <https://www.bbc.com/news/technology-50573071>.
- Barad, Karen. "Post-humanist Performativity: Toward an Understanding of How Matter Comes to Matter." *Signs: Journal of Women in Culture and Society* 28, 3 (2003): 801–831.
- Barad Karen. "Quantum Entanglements and Hauntological Relations of Inheritance: Dis/continuities, SpaceTime Enfoldings, and Justice-to-Come." *Derrida Today* 3, 2 (2010): 240–268.
- Bardzell, Jeffrey Shaowen Bardzell, and Ann Light. "Wanting to Live Here: Design After Anthropocentric Functionalism." *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, 1–24. New York: Association for Computing Machinery, 2021.. <https://doi.org/10.1145/3411764.3445167>
- Behar Katherine. "Facing Necrophilia, or 'Botox Ethics,' in *Object-Oriented Feminism*, ed. Katherine Behar (Minnesota: University of Minnesota Press, 2016).
- Bellacasa, María Puig de la. "Matters Of Care: Speculative Ethics." In *More Than Human Worlds*. Minneapolis: University of Minnesota Press, 2017.
- Berg P. "Asilomar 1975: DNA Modification Secured." *Nature*, September, vol. 455 (2008): 290–291. Available at [Nature.com/articles/455290a](https://www.nature.com/articles/455290a)
- Biswas Mellamphy, N. "Humans 'In the Loop'?: Human-Centrism, Post-humanism, and A.I." *Nature and Culture*, 16, 1 (2021): 11–27. <https://doi.org/10.3167/nc.2020.160102>
- Biswas Mellamphy, N. "Challenging the Humanist Genre of Gender: *Post-humanisms and Feminisms*." In *Different Voices: Gender and Post-humanism*, 15–27. Edited by Paola Partenza, Ozlem Karadag, and Emanuela Ettore. Netherlands: Brill Publishers, 2022.
- Blanco-Wells, Gustavo. "Ecologies of Repair: A Post-human Approach to Other-than-Human Natures." *Frontiers in Psychology* 12 (April 8, 2021): 1–10. <https://doi.org/10.3389/fpsyg.2021.633737>, 2.
- Bogost, Ian. *Alien Phenomenology, or What It's Like to Be a Thing*. Minneapolis: University of Minnesota Press, 2012.
- Braidotti, R. *The Post-human*. Cambridge, Polity, 2013.

- Bryson, J. "Robots Should Be Slaves." In *Close Engagements with Artificial Companions: Key Social, Psychological, Ethical and Design Issues*. Edited by Y. Wilks. Amsterdam: Benjamins Publishing Company, 2010. 1–12.
- Chandler, David. *Onto-politics in The Anthropocene: An Introduction to Mapping. Sensing And Hacking*. New York: Routledge, 2018.
- Chandler David, Franziska Müller, & Delf Rothe (Eds.). *International Relations in the Anthropocene: New Agendas, New Agencies and New Approaches*. Basingstoke: Palgrave MacMillan, 2021.
- Crutzen, Paul J. "Geology of Mankind." *Nature* 415. 6867 (2002). <https://doi.org/10.1038/415023a>
- Daigle, Christine and Terrance H. McDonald (ed.) *From Deleuze and Guattari to Post-humanism: Philosophies of Immanence*. London: Bloomsbury Academic, 2022.
- Ellul, Jacques. *The Technological Society*. New York: Knopf, 1964.
- Engert Kornelia and Christiane Schürkmann, "Introduction." *Nature and Culture* 16, no. 1 (2021). <https://doi.org/10.3167/nc.2020.160101>.
- Falkenhayner, Nicole. "The Ship Who Sang: Feminism, the Posthuman, and Similarity." *Open Library of Humanities* 6, no. 2 (2020). <https://doi.org/10.16995/olh.598>.
- Ferrando, Francesca. "Post-humanism, Trans-humanism, Anti-humanism, Meta-humanism, and New Materialisms: Differences and Relations." *Existenz* 8, no. 2 (2013): 26–32.
- Ferrando Francesca, "Is the Post-Human a Post-Woman?—Cyborgs, Robots, Artificial Intelligence and the Futures of Gender: A Case Study," *European Journal of Futures Research* 2, no. 1 (2014): 1–17. <https://doi.org/10.1007/s40309-014-0043-8>.
- Forlano, Laura. "Post-humanism and Design," *She Ji: The Journal of Design, Economics, and Innovation*, 3 (1): (2017): 16–29. <https://doi.org/10.1016/j.sheji.2017.08.001>.
- Foucault, M. "Governmentality." In *The Foucault Effect*. Edited by G. Burchell, C. Gordon and P. Miller. Chicago: University of Chicago, 1991.
- Gherardi, Silvia. "If we Practice Post-humanist Research, Do we need 'Gender' any Longer?" *Gender, Work & Organization* 26, no. 1 (2019). <https://doi.org/10.1111/gwao.12328>.
- Gunkel, David J. *Robot Rights*. Massachusetts, MIT Press, 2018.
- Haidt, Jonathan. *The Happiness Hypothesis*. New York: Basic Books, 2006.
- Haraway, Donna. *Simians, Cyborgs and Women: The Reinvention of Nature*. New York: Routledge, 1991.
- Haraway, Donna. *When Species Meet*. Minneapolis: University of Minnesota Press, 2007.
- Herbrechter Stefan. "Critical Post-humanism." In *Post-human Glossary*, 94–96. Edited by Rosi Braidotti and Maria Hlavajova. London, UK: Bloomsbury Academic, 2018.
- Hester, Helen. *Xeno-Feminism Theory Redux*. Cambridge: Polity Press, 2018.
- Howard, Philip N. *Pax Technica: How the Internet of Things May Set Us Free or Lock Us Up*. New Haven: Yale University Press, 2015.

Humanity Plus. "Trans-humanist Declaration." <http://humanityplus.org/philosophy/trans-humanist-declaration>.

Hurlbut, J. B. "Remembering the Future: Science, Law, and the Legacy of Asilomar." *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, 126–151. Edited by S. Jasanoff and S-H. Kim (Chicago, University of Chicago Press, 2018).

Jasanoff, S., and S-H. Kim. "Future Imperfect: Science, Technology, and the Imaginations in Modernity." *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, 1–33. Edited by S. Jasanoff and S-H. Kim. Chicago, University of Chicago Press, 2018.

Key, Cayla, and Cally Gatehouse and Nick Taylor. "Feminist Care in the Anthropocene: Packing and Unpacking Tensions in Posthumanist HCI." *Designing Interactive Systems Conference* (New York: ACM 2022). <https://doi.org/10.1145/3532106.3533540>.

Kolozova, Katerina. *Capitalism's Holocaust of Animals: A Non-Marxist Critique of Capital, Philosophy and Patriarchy*. UK: Bloomsbury Academic, 2019.

Latour, Bruno. *Reassembling The Social: An Introduction to Actor-Network-Theory*. Oxford New York: Oxford University Press, 2005.

Latour, Bruno. "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts." In *Shaping Technology/Building Society: Studies in Sociotechnical Change*, 225–258. Edited by Wiebe E Bijker and John Law. Cambridge: MIT Press, 1992.

Laruelle François. *Philosophies of Difference: A Critical Introduction to Non-Philosophy*, trans. Rocco Gangle. UK: Bloomsbury Academic, 2011.

Liu Michelle, "Com-posing 'Abolitionist≠Post-humanism': Notes on Incommensurability, Incomputability and Incognita Syn-aesthetics". MA diss., Western University, 2020. <https://ir.lib.uwo.ca/etd/7016>

McCray W. Patrick. *The Visioneers: How a Group of Elite Scientists Pursued Space Colonies, Nanotechnologies, and a Limitless Future*. Princeton: Princeton University Press. 2012.

McFarlane Anna. "Medical Humanities." *Critical Post-humanism Network: Genealogy of the Post-human*, August 1, 2017, <https://criticalpost-humanism.net/medical-humanities/#:~:text=By%20using%20medicine%20as%20a,possibilities%20of%20a%20critical%20post-humanism>

Miller, Clark A. "Globalizing Security: Science and the Transformation of Contemporary Political Imagination." In *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, 277–299. Edited by S. Jasanoff and S-H. Kim (Chicago, University of Chicago Press, 2018).

Muñoz, José Esteban. "Theorizing Queer Inhumanisms: The Sense of Brownness," *GLQ: A Journal of Lesbian and Gay Studies* 21, no. 2-3 (June 2015): DOI 10.1215/10642684-2843323.

Peterson, Christopher. *Monkey Trouble: The Scandal of Post-humanism*. New York: Fordham University Press, 2018.

- Phillips Anne. *The Politics of the Human*. Cambridge, UK: Cambridge University Press, 2015.
- Plumwood, Val. *Feminism and the Mastery of Nature*. New York: Routledge Press, 1993.
- Roden David. *Post-human Life: Philosophy at the Edge of the Human*. London: Routledge, 2015.
- Ruppert, Evelyn. "Sociotechnical Imaginaries of Different Data Futures: An Experiment in Citizen Data." Rotterdam, Rotterdam University, 2018.
- Schussler Aura-Elena, "Post-humanism and Ecofeminist Theology: Toward a Nondualist Spirituality." *Journal for the Study of Religions and Ideologies* 19, no. 57 (2020): 32-46.
- Smart Alan and Josephine Smart. "Multispecies Ethnography." in *Post-humanism*, 43-64. Toronto, ON: University of Toronto Press, 2017.
- Spanos, William V. "Post-humanism in the Age of Globalization: Rethinking the End of Education." In *Toward a Non-Humanist Humanism*. Albany: State University of New York Press, 2017.
- Taylor, Charles. *Modern Social Imaginaries*. Durham, Duke University Press, 2003.
- Toffoletti, Kim. "Catastrophic Subjects: Feminism, the Post-human and Difference." *Thirdspace: A Journal of Feminist Theory & Culture* 3, no. 2 (2004).
- Weber, Max. *The Theory of Social and Economic Organization*. New York: Oxford UP, 1947.
- Wilderson, Frank B. *Red, White & Black Cinema and the Structure of U.S. Antagonisms*. Durham: Duke UP, 2010.
- Willett, C. *Interspecies Ethics*. New York: Columbia University Press, 2014.
- Wolfe, Cary. *What Is Post-humanism?* Minneapolis: University of Minnesota Press, 2010.
- Yungblut, Elden. "Sex in Post-human Futures: Rethinking Gendered Embodiment in the Anthropocene." *Gnosis* 17, no. 1 (2018).
- Zolkos, Magdalena. "Life as a Political Problem: The Post-human Turn in Political Theory." *Political Studies Review* 16, no. 3 (April 21, 2017): 192-204. <https://doi.org/10.1177/1478929917720431>, 202.