

RESEARCH

Sensing As... From Quorum Sensing to Immersion – a Posthuman Symptomatology

Liana Psarologaki

This is an investigative attempt to create a hopeful new becoming of thought. It comes in response to contemporary issues of care, the schism between, and respective weaknesses of both sciences and humanities to advance with each other and pressing issues of climate and social justice. It aims to determine the potential of a new interdisciplinarity (an inter-disciplination) of posthumanities through three critical and contextual tactics: Deleuze's symptomatology, Shaviri's science fiction and Frichot's dirty theory maintaining an ecofeminist perspective. It examines maladies of anthropocentrism, problematics of institutionalised interdisciplinarity and lost cultures of contemplation. It uses science fiction and what-if/what-it-is-like scenarios to advocate for a new organism-environment entity defined as 'slyborg' (a slut-cyborg). It starts with definitions of posthuman life and zöe by Rosi Braidotti which, together with studies on neurobiology, lead us to an affirmation of organism-environment survival necessity. Helene Frichot's creative ecology of dirty theory brings methodological inoculations that consider the unclean and smudged, the ambivalent and non-linear as potentiality for hopeful futures. These are not bound to the bias created by Eurocentric male-dominated traditions of superiority and lead to hypotheses freed from normative and institutionalised constructs. The essay explores sensing with the world affirming life around two concepts: quorum sensing and immersion. It assigns these to the slyborg as definitive characteristics beyond species and territory, implying therefore that the slyborg is post-anthropocentric – an entity-topos. It concludes with a hopeful scenario that the slyborg is ready to emerge as hopeful ecosystemic transformation born out crisis.

Keywords: immersion; symptom; posthuman; sensing; interdisciplinary

A Symptom's Tale: Call to Purpose

Reading the many emergent streams of thought around care and the medical humanities, we can say that the recent pandemic brought an additional treatise of contemporary and future humanitarian crises. The latter manifest in two distinct but reciprocally concomitant facets in the post-capitalistic worlds we live in regardless of the territories we call home and the heritage we are decorated by. The first facet concerns the ever-congregating attempts to question the term human (and Anthropos) most notably represented by the work of Rosi Braidotti on the posthuman from an inhumanist perspective (2013a). This facet also problematises around issues of disciplinarity, binary dichotomies and constitutive issues of life; it is an almost ecosystemic facet. The second facet concerns the recentralisation of medical acts with a focus on mental health within the scope of environmental humanities, clinical (meta)philosophy and the arts. It introduces terms and concepts from

the latter to inject the previous to allow all involved to radically progress. This essay aims to eclectically borrow theoretical devices from each of those facets to determine the potential of a new interdisciplinarity (an inter-disciplination) of posthumanities to support emergent concepts of sustainable life.

This potential is less a normative methodology for generating theoria and more a hopeful new becoming made of two philosophical tactics: (i) symptomatology (Deleuze 2004a) and (ii) science fiction (Shaviri 2015), entangled via 'dirty theory' (Frichot 2019). It will aim to define an inter-disciplinarity made of symptomatological *what-ifs*. For such, anxiety is not an ingredient as in the case of Julia Kristeva's model of interdisciplinarity (1998) that paved the way for many notions of interdisciplinary thinking (and creating), and which remains institutionally focussed and quasi-teleological. It is a symptom that is definitive of, and well rooted in humanity; a malady we are struggling to create scenarios to escape from and heal. In the context of the humanitarian crisis that we are facing, living as part of, and around ecosystems, which is a crisis of Anthropos and of health and morality, one must explore both the cause (symptom) and the futurity

(what if) of the problem to reach a (new, unthought of) solution. The first philosophical tactic that will allow us to methodologically propose a new posthuman humanities inter-disciplination is the symptom.

Gilles Deleuze, in his commentary on the work of Masoch in conversation with Madeline Chapsal, introduces symptomatology as a tactic for inter-disciplination (among sciences and the arts in this case). He identifies three medical acts: symptomatology, aetiology and therapeutics. In his words,

[w]hereas aetiology and therapeutics are integral parts of medicine, symptomatology appeals to a kind of neutral point, a limit that is pre-medical or sub-medical, belonging as much to art as to medicine... The work of art exhibits symptoms, as do the body and the soul. Albeit in a different way. In this sense, the artist or writer can be a great symptomatologist... (Deleuze 2004a: 132).

He continues,

...we no longer attempt to *see* what is there, but seek instead to justify our prior idea.... a writer can go farther in symptomatology, that the work of art gives him a new means... Precisely, symptomatology is located almost outside medicine, at a neutral point, a zero point, where artists and philosophers and doctors and patients can come together (Deleuze 2004a: 133–4).

In the context of this essay, we will attempt to take Deleuze's symptomatology, a clinical term, further, so it becomes a term of inter-disciplination; a posthuman term. This will allow us to explore symptomatology as a means to perform explorations of thought and praxis that allow disciplines to perform fabulative leaps, which lead progressively to more inclusive and less biased modes of life. To perform this leap, sciences, particularly medicine and medical humanities, need to acquire or rather reclaim the means to become science fictions. This is not necessarily a change in kind but a change in intensity, and as Deleuze notes, it may mean to perform a shift from concentrating on the cause and application of treatment to the events and signs that lead to a future diagnostics – a symptomatology. In our case, this symptomatology is a phantasm, a creation by an artist who is able to devise scenarios beyond what is already known by fact. The artist's or writer's aim would be less to plot solutions that will transcend the existing ones in terms of applicability of treatment of any malady, and more towards engineering worlds that warp and affirm potentialities that cannot yet be seen by doctors for instance. This is by no means a polemic against the so called hard or royal sciences in order to prove their predicament to solve the current and future problems of humanity. This is instead a tactical attempt to reclaim the importance of equally predicated humanities and in this case posthuman humanities and define this neutral, zero point outside of medicine that can act as fabulative symptomatology and therefore trigger progress towards

more open and therefore sustainable practices and modes of living.

The second tactic relates to science fiction, which has become a contested term. Many terms became commodified through popular culture, including science fiction and its pop counterpart sci-fi. Unlike the later, the previous is a fundamentally posthuman act of creating worlds. It is disclosive and negates the dialectics of otherness; 'the inner engine of humanist's Man's power' (Braidotti 2013a: 68). Otherness (or the non-, as of non-healthy, non-normal, etc) to Braidotti is 'rendered as [pejoration, pathologized and cast out of normality, on the side of anomaly, deviance monstrosity and bestiality. This process is inherently anthropomorphic' (Braidotti 2013a: 68). Science fiction however must go beyond anthropocentrism and otherness to exist. Through science fiction we recognise *eauton-in-other*, so there is no other. This is particularly evident in cultural critic Steven Shaviro's use of science fiction to explore notions of sensing and thinking (Shaviro 2015). In his book *Discognition* (2015), Shaviro questions non-human otherness, ideologies of biotechnology and sentience using science fiction as method. He explains that science fiction 'proposes counterintuitive scenarios... to imagine what it would be like if they were true' (Shaviro 2015: 9) and that science resonates with fiction through hypotheses constructed in similar ways, with fiction and fabulation going beyond what is analytically possible in the already known realms of the physical and intellectual world constructed by (mostly westernised) humanity. Shaviro structures the book in chapters titled 'Thinking Like...'. Each chapter creates *thinking as* conditions and *what if* scenarios of fictional speculations what he calls 'overt science fictional fabulation' (2015: 23), a method of philosophical enquiry that is not at all novice but at the same time not extrapolated and deterritorialised as such to allow a systematic (and not systemic) challenge of epistemological assumption and commodified intuition. We can be hopeful that a posthuman science fiction can create such affordance; a neutral, zero point where one can fabulate bizarre scenarios of ecological standing.

Tactical Positioning – Becoming Dirty

The key to this act, this leap of inter-disciplination is the posthuman and ecofeminist that follows 'platform-independent patterns' (Shaviro 2015: 115) of information instead of processing the latter: the dirty. Ecofeminist philosopher Helene Frichot coined the term 'dirty theory' (Frichot 2019) to pave the way for a 'sedimented archive of thinking' (Frichot 2019: 6). In her words '[d]irty theory is wary of the strictures of disciplination, preferring instead inter-disciplination, a wayward approach to problems... Dirty theory appropriates and critically, knowingly, misappropriates, because ideas do not belong to singular authors, the dirty theorist averts' (Frichot 2019: 7). In our posthuman inter-disciplination of symptom and science fiction, reason is not determined in advance. On the contrary, it gives way to making a fuss. Instead of being assigned a measured disciplinary place to make place, to make matter and to posit new avenues, it aims to 'cross boundaries, challenge decorum, contravene norms'

(Frichot 2019: 9). This is, in the context of this essay, a matter of survival. In dirty theory, dirt seizes to become the abject other. 'Dirt is not same-difference, it is processual difference through and through' (Frichot 2019: 134). With dirt, theory can produce 'effects that were never intended' (Frichot 2019: 152). 'We need a great and dirty critical infrastructure to manage what confront us today as the Earth suffers' (Frichot 2019: 153). This brings fundamental questions of ecosystemically positioning human and non-human life, creating new concepts through symptoms and science fictions and reorienting ourselves towards a gao-political infrastructure of thought. Perhaps multiple infrastructures are needed. These will not focus on the processing of knowledge towards applications and treatments, but will create affordances to challenge applications and treatments via new fabulative scenarios. An ethics of such is becoming inherently necessitated. The following question therefore emerges: how do we ethically frame a dirty infrastructure of science fiction?

Such questions can penetrate everyday discussions and academic debates respectively. Recently, during a university research seminar, a professor of sentient systems declared their wonder and frustration that a scientifically and ecumenically accepted and concrete 'definition of life' was neither in place and nor on the cards soon, so as to resolve issues of bioethics in AI. This regarded predominantly biological life (bios) and the discourse around consciousness, cognition and the differentiation of those (by grade and/or by kind) in human beings and non-human entities (that are made by humans). The setback in this occasion is continuing to think within the species and positioning life primarily within the human subject, which we consider stable, normal and central. As cultural-political geographer Ben Anderson notes 'there has been a tendency to equate the biological life with the fixed or invariant, and the social with change and variation' (Anderson 2016: 113). The problem presented in debate was more a lacuna in the process of thought and approach to science. It felt like almost a devastating void in information that is detrimental to process and progress altogether. From a dirty theory perspective, the accumulative differentiation in information is secondary to the way the information is sourced and where from. A definition of life that does not create a fuzz and is obdurately rooted in the image of a centralised human procured by the westernised model of white Eurocentric man (what Braidotti calls anthropocentrism) is not meaningful. Instead, a posthuman definition of life based on science fiction and inter-disciplination (what if there is no species?) may bring a new ethics, new conceptual infrastructures and new much needed information or not. The source of such would be the neutral point, the zero point of symptomatology.

We need to be reminded at this point that similar questions around life occupy much of contemporary creative non-fiction and popular philosophy. These awkwardly positioned genres of quasi-artistic writing revolve around lifestyle, wellbeing, deeply thought quotes and practical methods to do with coping with living in the world and understanding ourselves as humans. They

remain however – no matter how progressively (and aggressively) marketed, rooted in the same fundamental questions that were once primarily matters of cosmic topology involving the divine and the secular; questions of a divided, binary world. Dirty theory reminds us that life, and what we call a world, needs soil plus seed, 'organism plus environment' (Bateson 2000: 491). This approach leads us to a posthuman axiomatic – to live and to experience life, to be living, means to sense with the world. To position this sensing within a socio-political, and also quasi-mythological, axis mundi will always mean to assume such sensing as human; think about constitutional and ceremonious acts of religious and political life in the lines of royal anointment or governmental affirmation and how far these are from a definition of life that is not anthropocentric. This bias has quietly and progressively infiltrated the fields of scientific thought and practice even more so intensively and vividly in developing countries and indigenous territories, and less what we perceive as the westernised and capitalised part of the world. In other words, medicine has expanded to overrule the previously mystical practices of healing and ritualistic endeavours of care that were spanning from everyday in-house remedies to ceremonial vigils and alchemistic tactics. What is missing is a pedagogical understanding and critically reflective tactical response – collective as well as individual – which is affective, ecological and culturally informed, a future erudite emancipation. In order that this is meaningful and progressive, it will be neither canonical nor ecumenical; it will be interdisciplinary; dirty. It will be transformative, therefore entailing haecceities of chaos and wisdom.

Whilst Julia Kristeva in her seminal essay implied that a diagonal axis that cuts across disciplines would feel more like crawling on cog-paved alleyways of interdisciplinary anxiety (Kristeva 1998: 6) we can now tell that anxiety is part of a symptomatology (among other contemporary maladies) that will lead to this new transformative path. The dirty model will offer instead of a centralised diagonal axis, many marginal zig-zag cuts across. While interdisciplinarity is transformative and accommodates metastable identities, dirty posthuman inter-disciplination 'quasi-stable ... internally fragmented and specialised, semi-autonomous, because the boundary of each discipline cannot be clearly defined.' (Chettiparab 2007: 3), it becomes with dirt and with the connective, invisible matter that sustains ecosystems and affirms survival. Julia Kristeva's interdisciplinarity acquires an affective capacity to afford a cerebral quality: to worry. It is almost as if interdisciplinarity has or rather is made of a (human) brain. This meta-analogy of interdisciplinarity as brain is neither orthodox nor esoteric. It is not purely literary either. It is more onto-eco-topological but not entirely inclusive and disclosive – it is not looking out into the world or across modes of life. This is not a question of ideological disputing or definition of limits and boundaries. It is an exploration of idiosyncratically defining a future for both hard (or royal) sciences and humanities whose crisis – an aftermath of humanitarian, cultural and environmental predicaments supermodernity is facing – presents key limitations for sciences themselves

in theory and in practice. This is exactly why a dirty, posthuman reading of life is needed and it will be made possible via a symptomatology of science fiction. The first step towards reaching this is to address the pathologies of traditional (human) humanities before ever vilifying the hardness of hard sciences.

To Live As Human – An Interdisciplinary Mono-Species Tragedy

Feminist philosopher Rosi Braidotti in her essay 'Posthuman Humanities' explains the pathology of centralising the human in the humanities and sciences when both suffer from debilitated imagination. She notes a crisis in (human) humanities and highlights their incapacity to cope with 'the culture, practice and institutional existence of science and technology' (Braidotti 2013b: 4). Despite the recent and rigorous scholarly attempts of creating a space for challenge and opportunity, Braidotti notes, the post-anthropocentric subject – a redefinition and repositioning of *Anthropos* itself – remains tied to notions of 'an expanded relational self' (2013b: 6) confined by the problematics of the very question it is still preoccupied with what life accounts for. Braidotti articulates sharply the commodification of life (and Life) by the advanced capitalism forces that trade and profit from it, and which know that '[l]iving matter – including the flesh – is intelligent and self-organising, but it is so precisely because it is not disconnected from organic life Zoe as the dynamic, self-organising structure of life itself stands for generative vitality. It is the transversal force that cuts across and connects previously segregated species, categories, and domains' (2013b: 6). Living matter is Kristeva's reinvention of diagonal interdisciplinarity axis of anxiety into a dirty, posthuman zig-zag of organism-environment complexes. In this life-zoe (and everything in between) world. Man cannot afford the centre; not because he lacks access to information and therefore knowledge but because the centre is already inherently occupied by the brainless majority (DeSalle 2018: 9).

The traditional *Anthropos* is *Oedipus Rex* – the customary image of (White) Man. He has long been a dramatic figure dragging itself through the slavery of being royal, sometime decorated in a professorial gown sometime in doctor's scrabs. It is not Sophocles' wise tyrant who stands before the Sphinx, the prototype cyborg female, and who by summoning 'man' kills the beast, like the simulacrum of unorthodox St George. It has become the awkward creature called 'Oedipus Rex in the Genomic Era', coined by Julia Kovas and Fatos Selita (Kovas and Selita 2021). He is a machine-creature searching for self-truth battling through the illusion of 'free will, fate and chance; prediction, misinterpretation and the burden that comes with knowledge of the future; self-fulfilling and self-defeating prophecies' (Kovas & Selita 2021: 1). He hopelessly endeavours to demystify his flesh and its genomic identity. He sees his DNA as a biological connector among species; a dated mediator affirming his ecosystemic superiority. Kovas and Selita's *Oedipus Rex in the Genomic Era* (2021) is an image of new, yet old- entity,

a science fiction of dialectics among disciplines and species. Its conceptual scaffolding follows zig-zags among ancient literary dramas and studies of scientific scope. Biology and behavioural genetics are guided on stage by classic literature and mythology to ask a prolific question: when an entity so obsessed with finding the truth of its flesh's origins and futures reaches a point of desirable knowledge what does it do with the information? Does it create a morbid prophesy or an illusory opportunity for exploitation through change? What if the intelligence it acquires is irrelevant? In Kovas and Selita's words,

Changes at the macro-level... can lead to fundamental changes in people's traits, including our ability to regulate our behaviour and emotions. It is therefore incorrect to assume that the role of environments and intervention is somehow undermined by strong genetic effects on our behaviour. Our system is in a state of continuous updating and modification. Any change is possible. (2021: 100).

Reading *Oedipus Rex in the Genomic Era* (2021), together with Rosi Braidotti's *The Posthuman* (2013), lead us to examine a posthuman science fiction against Peter Sloterdijk calls 'anthropotechnics' (Sloterdijk 2016: 95), in the context of making dirty theory. In Sloterdijk's words we are dealing with 'a clearly outlined theorem of historical anthropology ... [where] "the human being" is from the ground up a product and can only be understood – within the limits of our knowledge to this point – by analytically pursuing its methods and relations of production' (2016: 95). Sloterdijk also notes that 'the human being both as a species-being and as a matrix of opportunities for individualization, is a magnitude that can never exist in mere nature and that was able to first form itself only under retroactive effect of spontaneous proto-technologies and in 'living communities' with things and animals' reaffirming that 'the human condition is thoroughly a product and a result' (2016: 96). We can agree, therefore, with Rosi Braidotti that a tactical (dirty) shift can renew the humanities and cure the paralysed phantasm in sciences. It will come from posthumanism that 'reshapes the identity of humanistic practices, by stressing heteronomy and multifaceted relationality, instead of autonomy and self-referential disciplinary purity' (Braidotti 2013b: 9). It will make humanism, the human and humanity as we know it, a mono-species tragedy characterised by anxiety and compulsive obsession. These symptoms are becoming definitive of the human condition, meaning that perhaps the only way forward is indeed the decentralisation of the human being in ecological thinking and the summoning of science fiction to the service of science, for the latter to achieve a fabulative leap towards healing. The leap screams: what is a species after all?

George Paxinos¹ novel, *A River Divided* (2022), tells a tale of science fiction that questions the nature/nurture origin of human behaviour by a mythopoetic assemblage of neuroanatomy, genetics, religion, and ecology taking place in Australia, Israel and South America. The main characters, who collectively and individually suffer from

their inability to access a desired truth, act sometimes in oblivion (like Oedipus) and often in much anticipated anxiety. Paxinos' fable makes a pertinent note regarding the human fallacy to be obsessed with the brain and what the brain does. His main character, Jose, is one of two monozygotic twins born out of cloning and believes that the problem of contemporary ecosystemic life is that the size of the human brain is wrong. It is too small to keep up with the tools it creates, and too big because it is able to design and create such apparati. Whilst Paxinos' Oedipus Rex does not carry the image of a white fully abled man, he and his DNA are still protagonists for the average reader. If we attempt to re-read Paxinos's *River*, trained in dirty posthuman inter-disciplination, we can refocus on the anxiety projected as human-environment symptom that dictates the plot and reassign the protagonist's role to the tree and soil in the Amazonian river; the tree that witnesses murders, demolitions and deforestations; the same but different tree that stands seemingly rigid on ancient roots but moves with every breeze and has different foliage every moment. We can ask: What if that tree carried more important genomic information than Jose? What if the divine encounter was never a matter of sustaining a religious leader's DNA through aeons, but a matter of imagining worlds of humans becoming marmosets and trees becoming immanent divine entities? What it is like for that tree to sense? Can we even come close to imagining potential scenarios where there is an entity that provides us the sacred information of who we are but is not of humane substance? Furthermore, would this entity ever be able to sense and think – and therefore live – like a human being?

Quorum Sensing: a Posthuman Symptomatology

In Shaviro's *Discognition* (2015) mentioned previously, there is chapter called 'Thinking Like a Human Being' based on the plot of Scott Bakker's novel *Neuropath* (2008). It serves to remind us that any special status of human cognition is illusory and any attempt to apprehend the lived experience fully is futile. Shaviro explains that 'I am unable to realize that my experience is, in point of fact, circumscribed and partial. Since I cannot perceive the boundaries of my experience, I cannot even grasp that my experience is limited, rather than being comprehensive' (2015: 109). Life happens, and for the most part, it is a haecceity that humans are obsessed with and fail in understanding. Such a pursue and delusion could give way to perhaps the most significant mono-species attribute of the westernised canonical human, an image that is undemocratic, biased, inaccurate, based on the colonial and postcolonial supremacy of the binary otherness that is hostile and a constitutional characteristic of contemporary capitalist world. This attribute – Braidotti's anthropocentrism – is summarised by Mellanie Challenger, 'The world [of the canonical human] is now dominated by an animal that doesn't think it's an animal. And the future is being imagined by an animal that doesn't want to be an animal' (Challenger 2021: 1). Furthermore, she says that 'human life may be a blend of biology and dream' (Challenger 2021: 6) and that we 'rely on species

membership as if it is a magical boundary (Challenger 2021: 2). The fabulative turn therefore to the bestial, the endosymbiotic, the marginal and neuropathologic, to the thing that we cannot imagine thinking like a human being, can be the dirty posthuman turn of humanities needed by science to address contemporary ecosystemic maladies. 'The body, besides having its fleshy milieu with its own symptomatic signs is also now a part of a different coded field of signs: the system of illnesses' (Martin 2018: 198–199) and 'illness implies a life' (Radman & Schon 2018: 12n). These are still somehow confined by the barriers of (human) skin and skull. Andy Clark and David Chalmers in their seminal essay 'The Extended Mind' (1998) say that 'part of the world is... part of the cognitive process' (1998: 8) adding that 'seeing cognition as extended one is not merely making a terminological decision, it makes a significant difference to the methodology of scientific investigation' (1998: 10).

Making a posthuman fabulative leap, we can argue that sensoria and pre-conscious affective reciprocal encounters taking place within the world are also extended; qualia are a shared resource that is not add-on. This creates the condition for a dirty posthuman subjectivation, an individuation that calls for the bodily flesh, its cyborg extensions and extended resources that produce and sustain metastable and fragile environmental affordances. The latter are coupled with us and form part of the cognitive and sensorial package and therefore make sentient life. 'Once the hegemony of skin and skull is usurped, we may be able to see ourselves more truly as creatures of the world' (Clark & Chalmers 1998: 18). Clark and Chalmers mention a calculator or Filofax as potential extended mind resources. These can include a pair of corrective vision glasses, a hearing aid, a smartphone, a smartwatch, a stylus and a pad, a car and most importantly medical aids such as blood glucose monitors and patches, stomas and cardiac pacemakers. Least expected, a service animal may be also added to the list. Each posthuman subject – each patient – is made of flesh and the sentient apparati that extend beyond skin and skull and altogether make a cyborg sensorium,² a cybernetic organism (Dumit 2006: 182), an 'exogenously extended organizational complex functioning as an integrated homeostatic system unconsciously' (Clynes & Kline 1960: 27) – dirty matter. What if this cyborg was not captain (from Greek cyber) of its sensorial vessel? What if posthuman sense dwelled in a deterritorialised topos not yet discovered or given the attention deserved? There is an immediate dirty shift we can make in this case. What if cyborg loses his kyber-³ quality of individuation and becomes slyber – a slyborg after Frichot's 'slut' – the ambivalent dirty theory agent and slovenly housewife ... a dirty woman unable to keep her household in good shape' (Frichot 2019: 104). The slyborg is not interested in keeping in control like a kybaernetes and comes from an unclean background – a smudgy DNA. A slyborg is organism-environment and does not succumb to administrivia. A slyborg is neither a subject nor a species; she is a deterritorialised topos. What if the slyborg topos sensed and experienced life differently because its sensoria are not within a skull-skin territory?

Such a topos is what neurobiologist Robert DeSalle calls ‘the brainless majority’ (DeSalle 2018: 9), referring to the population of organisms-environment relata that continue to make the most of our ecosystems on Earth and its sensing is environmental. This kind of sensing (and therefore life (or zoe?) is called quorum sensing. The term refers to the capacity of organisms (in this case microbes) to sense and respond to environmental changes in a sentient manner, and ‘this kind of sensing is entirely molecular’ (DeSalle 2018: 9).⁴ Bacteria that sustain such environmental affordances – such as the bioluminescent bacteria that make up the smart lighting organ of the Hawaiian bob tail squid – can form mutualistic relationships that regard whole organs in living beings and allow those beings and their cultures to regulate themselves and their population as optimised by the contingencies in the environment. Quorum sensing does not require a brain, a skull or a human skin and it practices conviviality, affective compassion, and climate change literacy. It can serve as a new critical approach to life within a biome. The event of the living being becoming environment can lead thought in literary theory, arts, techne and the hard sciences including medical humanities. Steven Shaviro similarly (in another ‘Thinking As’ chapter) turns to the notion of sentience (sensory, affective cognition) in ‘the blob’, the slime mould conglomeration of nuclei called *Physarum polycephalum* that presents brainless, non-nervous cognitive capacities and can replicate and optimise networks, form patterns and make economic decisions by means of exploring environmental affordances. It ‘feels, and ponders, and decides... prods, pokes, and provokes its environment. It navigates and searches, oozing and flowing and extending itself through its surroundings’ (Shaviro 2015: 213–214). *Physarum* lives and experiences but cannot account for what it experiences for itself – or so we think we know, now (another what-if?) Shaviro concludes that sentience or lived experience of any kind is ‘inherently a matter of fictions and fabulations’ (2015: 215). In addition, it is the beyond skin and skull sensing likeness that is of importance here. Quorum sensing and its virtual counterpart, Shaviro’s sentience, conditions that are between organism and environment, are symbiotic and post-species. They represent what Donna Haraway calls a nature-culture continuum (Haraway 1997) and it is no coincidence that natureculture is ‘a concept that emerges from the scholarly interrogation of dualisms that are deeply embedded within the intellectual traditions of the sciences and humanities’ (Malone & Ovenden 2016).

Natureculture is an important methodological concept here because it studies post-human salience in natural ecosystems and primate populations, taking into consideration ‘cocreated history’ (Malone & Ovenden 2016) coming from socioeconomic as well as ethnographical data that come outside of the capitalised postcolonial world of the Eurocentric white man idea. Indicatively, *The International Encyclopaedia of Primatology* mentions a study of human–alloprimate interface in Bali, Indonesia. Natureculture is a dirty, posthuman concept that ‘offers the potential for new insights into multi-layered, socioecological relationships’ (Malone & Ovenden 2016).

The symptoms of the malady called humanity (Antonas 2020: 55) can be treated by turning to permaculture as ethics based on the principles of ‘care of earth, care of people, return of the surplus’ says María Puig de la Bellacasa who defines permaculture as ‘a global movement with many local actualisations’ (Puig de la Bellacasa 2010: 151) framing a new practical and environmental bioethics. ‘Bodies (soma) or situations (regimes) are seen as sites where socio-political interests and scientific developments touching “life itself” coalesce’ (Puig de la Bellacasa 2010: 156). She also brings in Karen Barad’s pertinent statement of life ‘composed of knots of relations involving humans, non-humans and physical entanglements of matter and meaning’ (Barad 2007) and Donna Haraway’s nature-culture continuum, where ‘reality is an active verb, and the nouns all seem to be gerunds with more appendages than an octopus... [and] the world is a knot in motion... A bestiary of agencies, kinds of relatings, and scores of time trump the imaginings of even the most baroque cosmologies’ (Haraway 2003: 6). Jasper Puir also returns to Haraway to reiterate that even on a genomic level ‘the body does not end at the skin. We leave traces of our DNA everywhere we go; we live with other bodies within us, microbes and bacteria, we are enmeshed in forces, affects, energies, we are composites of information... multiple forms of matter can be bodies – bodies of water, cities, institutions ... matter is not a ‘thing’ but a doing’ (Puar 2011) – we are assemblages, dirty matter ourselves – slyborgs. Thinking of the challenges and problematics in the notions of collective and extended bios-zoe entanglements, a dirty theory of quorum sensing and sentience, leads us to form a symptomatology of the human towards a science fiction of the posthuman. The first thing to note is the mono-species obsession with the existence of a brain and the resistance to turn to affective sensoria beyond a typical nervous system. This is because since modernity, humanity has been neurasthenic and resistive to assign a non-human perspective to its thinking, which is, per se, an unethical and anti-ecological doing but stems from other mono-species fixations belonging to a colonial past that still defines much of the presuppositions of the present. Historian Anson Rabinbach in his book *The Human Motor* (1990) reflects on Eurocentric (mostly German) studies on pathologies in scholarship and the definition of neurasthenia as related to modernity. Rabinbach brings a humanities perspective of modern symptomatology, which I would like to draw attention to focusing on two symptoms. These are, like quorum sensing, intensive, disclosive, environmentally extended and sensorially dependant: anxiety and bore-out.⁵ The symptomatology born out of these terrible two will counter-define a new posthuman positioning: contemplative immersion.

Diagnostics: An Extraordinary Case Immersion

There have been many anthropological and clinical studies on the symptomatology, aetiology and treatment of human maladies associated to our mental and physical capacity to endure life. The most notable ones historically come from the premodern or modern time with an expected focus on the Eurocentric population and its

struggles to keep up with the modern lifestyle. Culture historian Anson Rabinbach, for example, has studied extensively different aspects of health problematics associated with Nazi Germany. Noting that education has moved from intelligence-oriented life-long aim to performance and achievement metric, Rabinbach identified the intellectually taxed individuals of the 19th century as 'susceptible to neurasthenia' (Rabinbach 1990: 156). These neurasthenics present aboulia (a diminution of will) (1990: 159) and appear 'too tired to remember to be tired' (1990: 161). He also notably mentions the so-called science of fatigue to explain that such idleness can be explained by the tendency of organic life to find the shortest path to a goal' (1990: 172); what slime mould would do by sentience to reach the exit of a maze. Life therefore seems to exercise the law of least effort in an economic manner, making neurasthenia – which Rabinbach accepts as symptomatological mimesis of many maladies and not a malady in itself – a sustainable state of regression. Such, Rabinbach notes, may appear in (white, male Eurocentric) humans as a result of religious experience (in ritualistic ecstasy), hypnotic trance (by consuming LSD), emotional trauma, or anxiety and calls these 'primitive forms of human experience' (Rabinbach 1990: 169). This goes back to associating the primitive with the extreme (or the unthinkable, the fabulative) and therefore consider it 'other than' (and unfit for a scenario) when it comes to questions of what-is-likeness. The problem of otherness is rooted in the binary oppositions the world of humanity is constructed upon. Let us now ask in Shaviri's way: what is like to sense like a neurasthenic? What if anxiety is our new reality, the country that we live in? The short answer is that it means I am human because humanity and reality are the exact same malady (Antonias 2020: 55) and symptomatologically, my symptom is my identity and my root to diagnosis and healing. It defines me. Anxiety has been widely and traditionally used in association with human living and experiencing life in continental philosophy.⁶ Cristian Ciocan explains that existential anxiety (a dread that confirms life) comes from 'nowhere and yet being everywhere, manifests its power in relation to the worldhood of the world and to being in the world as such' (Ciocan 2010: 67). He associates boredom with anxiety through world disclosing affectivity. Sloterdijk on the other hand says that anxiety devulgarises the ordinary subject through the loss of the world...[while] boredom achieves a similar result through the loss of the self' (Sloterdijk 2016: 90). He associates Rabinbach's labour and neurasthenic fatigue as a sovereignty of boredom he calls 'the cardinal symptom of fin de siècle' (2016: 94).

The posthuman being is therefore a symptomatologically extraordinary case. It is born as Oedipus Rex by a genetic 50% prescribed to play the tragedy of being an animal that does not want to be called one – an Anthropos, and it still bears a part of a reptilian brain (where affects nest). It grows dominated by a mono-species Eurocentric culture, whether than beans it is born within it, or captivated and oppressed by its global and local networks of power. It has an extended sensorium and cognitive apparatus that sometimes is difficult to decipher or control because it

involves other sentient beings and things. It suffers. It is asthenic; a patient anticipating care. Following Mark Fisher, we can summarize the symptomatology of being human as aesthetic aphasia; the inability to act contemplatively and critically to political events embedded within the world, a 'malediction which no penitence can ameliorate' (Fisher 2009: 2). Fisher notes that such symptomatology is observed primarily in young people and asks a very pertinent question: 'how has it become acceptable that so many people, and especially so many young people, are ill?' (Fisher 2009: 19). Such neurological pathos is observed by means of loss -after all anxiety is loss of the world- when we are called to return to our default sensorium without our cognitive extensions. Colomina and Wigley describe this phenomenon as 'nomophobia'; the anxiety stemming from losing one's smartphone (2016: 243) In their words: 'The mobile phone is both a connection and disconnection device placed between the human and its surrounding, tuning the surroundings out or engaging differently with them... Equally the phone enable multiple other environments to be wrapped around the individual and choreographed in different juxtapositions. The idea that the body is in one place is gone' (Colomina & Wigley 2016: 243). This extended sense of a posthuman self that we see in our tools suffers from loss of capacity to perform contemplative immersion. In Byung-Chul Han's words we experience life through 'hyperattention... a rash change between different tasks, sources of information and processes' (2015: 13). We immerse in worlds that do not promise duration and are vacant of culture. We experience immanent immersion but having lost the connectivity with nature and the non-human world we become an animal deprived of its serenity of not trying to achieve anything. Instead, we become an animal 'forced to divide its attention between various activities ...incapable of contemplative immersion' (Han 2015: 12). This brings a mental and physical underload, becoming bore-out. The contemporary Immersion therefore becomes a symptomatological term of dirty theory of posthuman humanities. It is an event of environmental, meta-localised and re-territorialised sensorium that allows for a nature-culture continuum. It may be distinctive to homo sapience, and potentially to our Anti-Oedipus Rex, but it becomes reality via environmental affordance and exchange of substance among living and non-living relata and organic and inorganic matter. What if the brainless majority – the slyborg – is capable of contemplation? In this science fiction scenario, a new topos is a hopeful virtuality and through immersion she can experience 'an adventure of practicing other models of life' (Frichot 2019: 105). She encompasses a new entangled materiality. Her presence is of reappropriated energy and no orderly boundary. Her molecular structure is neither neat nor defined. She has no DNA and is of questionable origin and destination.

Therapeutics – Of Earthlings and Endlings

Immersive contemplation or contemplative immersion relates among others to the affective capacity to question the origins of things and engage with sensory and

cognitive what-is-likeness. Lydia Pyne notes on Endlings that ‘we have invented a word to mark the end of a species but finding the origin of one is an altogether different question. There isn’t a begining... it turns out that finding the literal origin of a species is impossible’ (Pyne 2022: 23). Not only is the ‘genos’ a colonial mechanism for forming narratives of pathos and tragedy by focusing on a last of its name (a non-human Oedipus Rex), but the obsession on extinction also including our own is a story of ‘hybris, negligence, misogyny’ (Pyne 2022: 27). A posthuman human, what I would like to call an Earthling after Sayaka Murata’s novel *Earthlings* (2020), must endeavour to practice new ways of undressing a self that is no longer to be found in one place or one body, but an ecological and cultural proxy (Pyne 2022: 36). It must perform care – care to earth, care to humans – with compassion that does not depend on the illusion of mono-species membership. It must abolish the concept of likeness and immerse in contemplating affective what-is-it-likeness by means of posthuman humanities kissing science; through science fiction. Deleuze and Guattari in *Anti-Oedipus* stress W.R. Bion’s importance on the I feel (Bion 1963) placed ‘in the realm of fantasy... an affective parallel to I think’ (Deleuze & Guattari 2004b: 20). They say that to exercise collective living ‘man ceases to be a biological organism and becomes a full body, an earth, to which his organs become attached, where they are attracted repelled miraculated’ (Deleuze & Guattari 2004b: 159). The Earthling reconstitutes its kinship, its ‘genos’ and its family – becomes Anti-Oedipus Res; a worldling, a dirty slyborg.

Posthuman notions of care coming from soft, minor sciences, arts and humanities must not only infiltrate, but drive the so-called major, hard or royal sciences such as medicine and health or life sciences. Such care will be ecotopian, practical and imaginative, speculative, disclosive and pragmatic at the same time – it will be dirty. To call for dirty care means that we can already imagine the unimaginable, a science fiction of symptomatology. Posthuman humanities often encompass principles of health and care that accept biotechnological means as constitutive parts of an extended sensorium and cognition. They are also well rooted in the indigenous, the marginal and the omitted, the local and the global, a shikata ga nai – a speculative fiction Japanese term that ‘speaks to the delicate balance between pragmatism and idealism – a critical negotiation as we face an ecologically compromised future’ (Bellamy and Wilson, 2019:245) and a present full of inequality. Let me bring here an anecdote. It is attributed to Margaret Mead and highly liked and shared on Twitter, Facebook, as well as a Forbes article. It is a fable cited by American physician and educator Ira Byock in *The Best Care Possible* (2012: 421–422) and has no reference to a source. It supposedly wants Mead responding to a student question: ‘What is the earliest sign of civilization?’ [...] with ‘A healed femur’ [...] ‘A healed femur shows that someone cared for the injured person... The first sign of civilization is compassion, seen in a healed femur... We are at our best when we serve others. Be civilized.’ Mead could have said that, and a non-human

femur rarely breaks, but if we cling to explore whether and when Mead actually said this, or how the femur broke, we may miss the point. The first important point is that we cling to our ability to romanticise things, in this case compassion. We do not care to learn that for example an animal femur rarely breaks and when it does it heals more quickly than the human counterpart because we are habitually ahistorical. The second and most important point is that civilization and by extent culture are rooted in compassion and this is communicated widely by a fable; science fiction, via the channels we have demonised for our ahistorical turn and loss of compassion. Posthuman care has a starting point in science fiction, posthuman humanities, and the arts, and it is not necessarily human-centred or mono-species. More importantly mono-species care (care of our kin) is not necessarily the best or the immediately available care for worldlings, who cannot afford a ‘selective denial of affective capacity, which is simultaneously a denial of agency’ but must embrace ‘the dynamic micro- and macro- biomes that envelop and connect all living things (DeFalco 2020: 40). There is a certain difficulty in building community with what for generations have identified as non-kin; a woman, an ethnic minority, an animal, a robot, slime mould. Trusting on-human agencies means surpassing the delusion of a primacy of species that belongs to the colonial past and therefore moving beyond the obsession on dominating ourselves and others, towards a sustainable, imaginative future. In the words of Rosi Braidotti, the future ‘is nothing more and nothing less than inter-generational [and inter-species] solidarity’ (2013b: 15), and inter-entity justice.

Contemplatively Slyborging – a Reflection

The majority of studies around the Anthropocene – studies of care, of the environment of politics – and the future is species wear an abysmal spoor. While they continue to be inherently anthropocentric and therefore desperate to imagine a future inclusive of a species, they recognise the world(?)’s stipulation for a more-than ontological shift in recognising new potential and affordances, towards one goal – survival. This essay attempted to frame this goal within the organism-environment context starting from a neutral point – a symptomatology. This led to an emerging agenda of fictional acts and thoughts of inter-disciplination using science fiction and dirty theory, and eventually – through contemplation – to a neologism: the slyborg. Through a zig-zag series of what-if questions and what-would-be-like scenarios, the slyborg emerged as an entity-topos (or organism-environment). She is able to contemplate and immerse in surroundings, matter and extended sentience. The slyborg is a dirty, ambivalent cyborg previously known as ‘other’. It carries a hopeful genome, shouting out that an intelligent and literate future is also dirty, primitive and ‘brain-less’ wearing their sensoria as (de-)quorum; beyond skull, beyond skin, through slime and hardware, through dust and debris. Whilst we may be unable to imagine the slyborg now, she is waiting in to be born out of labour, necessity and phantasm.

Notes

- ¹ George Paxinos is the neuroscientist who identified and named more areas in brain than anyone in history (94 nuclei).
- ² It is worth noting that the extended cyborg sensorium in a human was first articulated in the science fiction novel *Man Plus* by Frederik Pohl (1976). “What Pohl intuited was that there could be no obvious separation between sensorium and subject, consciousness, and body – nor between sensation, cognition, attention and affect. Change one ‘part’ and all parts change” (Dumit 2006: 183).
- ³ Cyborg, from cybernetics, linked to the Greek word *kybernaetes* (κυβερνήτης), which means the “helmsman of a ship” (Sorgner 2022: 13).
- ⁴ More on quorum sensing in Miller, M. B. and Bassler, B. L. (2001) “Quorum Sensing in Bacteria” *Annual Review of Microbiology*, 55(1), 165–199.
- ⁵ As previously the term symptom is used here in the context of the Deleuzian understanding of the clinical in the *Essays Critical and Clinical* (Deleuze 1997) and his attempt for a symptomatology in *Desert Islands and Other Texts* (2004a). According to Aidan Tynan “in the symptomatological register, the symptom is diagnostic, relating to the creation of new clinical entities, in the schizoanalytic mode it is therapeutic, an injunction to produce” (Tynan 2010: 153).
- ⁶ See Heidegger’s notions of existential being-in-the-world and sense-making in *Being and Time* (1962) and in ontological relation to boredom in *The Fundamental Concepts of Metaphysics* (1995).

Competing Interests

The author has no competing interests to declare.

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How to cite this article: Psarologaki, L. (2023). Sensing As... From Quorum Sensing to Immersion – a Posthuman Symptomatology. *Anthropocenes – Human, Inhuman, Posthuman*, 4(1): 7. DOI: <https://doi.org/10.16997/ahip.1408>

Submitted: 29 December 2022

Accepted: 27 September 2023

Published: 15 November 2023

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