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Porous Skins: Pandemic Posthumanism in Speculative Fiction

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What does it mean to be human in a world that is both viral and vulnerable? The current pandemic has made clear that we live porous lives in a porous world of bacteria, microbes, viruses, organic bodies, and non-organic matter. In this article I explore the ethical and embodied conflicts this exposes us to, proposing that the motif of human and posthuman skin in speculative fiction re-assesses the relation between exposure and agency. In near-future worlds of ecological, socio-economic and viral breakdown, the vulnerable and porous human epidermis becomes a key site for probing the ethics of an ecologically enmeshed concept of human selfhood. The posthuman subjects of the feminist speculative fiction by Larissa Lai and Rita Indiana are deeply immersed - for better and worse - in the toxic realities they inhabit; but importantly, they also explore ways to navigate this entanglement and develop both agency and health within such exposure, salvaging sustainable futures for humanity on a broken planet. Working within an ecocritical framework, this article therefore charts pathways through the often doom-laden dystopias of science fiction towards more creative ways of inhabiting porous and exposed skins, in order to sustain human and nonhuman life in pandemic environments.

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Skin opens the body into ambivalence. Permeable and porous, it puts the self in relation with the world; yet this relation is also an exposure, a constant negotiation between the organism's need to protect and sustain, and the forces and matters traversing it. 'Do not touch' is therefore an interdiction as commonplace as it is revealing, lest the tactile stimulation of such an elaborate organ prove too potent and challenge the very boundaries of the self. The 'noli me tangere' of Christian mythology evokes concerns that touch might endanger the integrity of the self, while in Freudian psychoanalysis, the interdiction of touch was introduced to avoid sexualising the therapeutic relationship. Yet given how omnipresent transgression is in the field of psychoanalysis, this also speaks of the symbolic significance of skin which reaches far deeper than concerns about patient-therapist interactions alone could account for. After all, Freudian psychoanalytical theory teems with violations of more metaphorical epidermic boundaries. In its most visceral form this might mean a breach of memory by the "foreign body" (Freud 1908: 85) of trauma, but can also occur when the motivated subconscious erupts into the symbolic order of dreams. To respect the patient's skin by not touching it means to restore the order and coherence of the self after the disruption of such breaches. Skin is always both a symbolic and embodied site on which the transgression and de-limitation of the self are constantly negotiated. One might, however, note that neither the symbolic depth of the psychoanalytical epidermis nor the transcendental connotations of a Christian divine order forewarned of the current pandemic reality, where even the tenderest of touches, along with breath, carries life-threatening consequences. Even this stark reality, though, has not shut down the ambivalence of skin - quite to the contrary: as touch threatens viral exposure, encouraging us to pragmatically treat our skin as a boundary we need to uphold and sanitize, the sheer yearning to touch has made us newly aware of how central skin contact remains to our sense of community and our own involvement in a web of social, emotional and ecological relations.

In this article, I will explore the ethical and embodied conflicts which our porous skins expose us to. By looking to speculative fiction as a genre naturally at home in pandemic realities of social and environmental breakdown, I am also interested in how this vulnerable and porous epidermis can be opened into new horizons of possibility for re-imagining a more enmeshed concept of human selfhood in an ecological sense. The posthuman subjects who people the speculative novels by Larissa Lai and Rita Indiana are deeply immersed - for better and worse - in the toxic realities they inhabit; but importantly, they also explore ways to navigate this entanglement and develop both agency and health within such exposure, salvaging more sustainable futures for humanity on a broken planet.

I think it prudent to linger with one easily misunderstood term – exposure – for a moment. Exposure, employed here in the ecocritical sense, describes the recognition of openness to other human and non-human matters and forces beyond our control. Being exposed in this sense is the core condition of all organic life, and, from an ethical perspective, entails vulnerability, mutual responsibility and a form of agency which Donna Haraway describes as "respons-able" (2016: 2): the ability to be addressed and the call to respond to such address by other matters and beings who might already have traversed, entered into symbiosis with, or otherwise become enmeshed with the self. My focus is firmly on this aspect of agency: We are all exposed, but this invites us to re-position ourselves, to respond, to navigate exposure in ways that foster life - not to submit to the apocalyptic gloom of the star wars, nor to passively accept extinction. In the interest of clarity, let me draw a parallel to what is surely upmost in most minds currently, the Covid-19 pandemic: the fictional figures I'll think with here seek the kind of manageable, life-sustaining exposure the closest real-world-equivalent of which is a vaccine. They do not attend Covid raves, because exposure as understood in this ethical form does not lend itself to denial. To the contrary, to be address-able and response-able requires a becoming-conscious of one's own position, a process which speculative fiction explores. This is partly because biopunk fiction is deeply situated, subjective and localised, and as such not overly interested in the idea of the total, whether this mean military or ecological annihilation.

Being (post)human on a crisis-ridden planet, one might say, requires a double awareness: On the one hand, it is inevitable that the sensate, material experience of inhabiting a body is subject to what Olivia Laing called the "native violence of bodily existence" (2021: 144). Bodies are necessarily prone to disease and reliant on benign nourishment and environments to thrive, yet Laing's subtitle gives this a more empowering twist; in calling her sprawling exploration of the nexus between bodies, power and liberation "A Book about Freedom;", she points to the deeper potentials of vitality enmeshed with this vulnerability. After all, the bodily energies which Laing traces, such as the erotic, also have an unfettered and untameable potential that promises possibilities of liberation to emerge from within the experience of vulnerability itself. I am interested in exploring precisely this friction from an ecological perspective, asking how skin can become a site of both enmeshment and emancipation into the kind of agency that does not have the machinations of power and exploitation as its primary aim.

The decidedly ethical and ecological thrust of Lai's and Indiana's feminist and queer biopunk fiction demonstrates how science fiction genres have changed since the earlier days of the more conventionally cyberpunk "virtual realities and digital escapism"

which, as Carlen Lavigne rightly points out, tended to be dominated by a "white, middle-class, heterosexual and very male perspective" (2013: 1). Sadly yet unsurprisingly, this has less to do with a lack of female writers' output than a marginalisation of their work; the imbalance of Bruce Sterling's 1988 *Mirrorshades Anthology*, which includes Pat Cadigan as its only female author, speaks volumes of this tendency. While the published output of 1980s cyberpunk was therefore marked by patriarchal subtexts, the texts I am looking to in my exploration of skin as a trope are more closely aligned with the science fiction of Octavia Butler or Marge Piercy, exploring the virtual alongside the ecological and the biotechnological. Their environmentally and technologically gritty fictional worlds expose the posthuman subject to be – in Rosi Braidotti's embodied sense of the word - a "work-in-progress" (2019: 41), experiencing subjectivity to be a relational, rhizomatic capacity. In such texts, the motif of skin crystallizes enmeshment as a fierce, ferocious condition. It functions as a site which creates alternatives to the kind of transhumanism which seeks unassailability, as defined by Nick Bostrum in "The Transhumanist FAQ" published on the World Transhumanist Association's website in 2003. These texts are instead responsive to Haraway's call for a language able to "insist on noise and advocate pollution" (1991: 176) which, of course, must not be misunderstood as a celebration of infection or toxicity. It is rather a call to unsettle normative categories and boundaries of human selfhood, creating a mode of speculative writing specifically attuned to a world in crisis.

My position for approaching these questions is therefore shaped by ecocritical frameworks. After all, it is not just the touch of other human beings that skin opens and exposes us to; it is also the touch of a wounded natural world that transgresses our skin, in a complex interaction between viral, ecological and human forces. The ecological foundation of such thought is precisely the reason why speculative fiction offers such a fruitful ground for re-thinking human skin as a symbolic and embodied site in (fictional or real) pandemic realities. The worlds of science fiction generally tend to be very much alive, their non-human matter endowed with subjectivity and agency, and their plotlines warning of ecological breakdown. Yet beyond the speculative, recent ecocritical theory offers a plethora of perspectives on such "heedless entanglements with more-than-human life" (Tsing et. al. 2017: 2) in a shared endeavour to shape a new conception of human life based on our participation in the ecosystems which we inhabit.

Haraway – like the writers I will discuss – offers an alternative to the perhaps most instinctive response to the realization that porosity entails not just connection but exposure: this can entail a defensive reflex, a closing off of borderlines, desiring a skin that might become impermeable. Perhaps unsurprisingly, such conceptions abound in

science fiction, especially when it is of the pandemic kind. To take just one example, Paolo Bacigalupi's titular *Wind-Up Girl* in his 2009 biopunk novel sports skin so fine the pores are barely perceptible. In a future world of rampant capitalism and bio-engineered plagues, she is one of the 'New People,' engineered and educated to pamper the rich. Despite the stuttering motions which she has been intentionally programmed with to set her apart from biological humans, at first Emiko seems a transhumanist vision come to life. Her skin and body are nearly impenetrable, making her unsusceptible to the bacteria and viral threats which demand the lives of so many in this dystopian universe. Indeed, once she throws off the docility she has been indoctrinated with, overcoming the seemingly inevitable sci-fi tendency of perfected bodies to be inhabited by obedient minds, she is the ultimate survivor in this precarious world. As the novel's setting, a future Bangkok, is flooded due to an ominous combination of profit politics and climate breakdown, she is one of the few who is perfectly equipped for this new reality. Her tendency to overheat in her near-impenetrable skin eased by the chill of the now omnipresent water, she hunts, scavenges and survives in a world in meltdown. Granted, figures like Emiko seem to question whether life, in order to be human, truly needs to remain enmeshed in organic systems of exchange and transversed skins. Her survival only becomes possible as the world dies. Yet the cost is organic life as we know it. Figures of absolute immunity thus create a zero-sum game, in which the survival of one species comes at the cost destroying another. In contrast, the 'noise' that Haraway proposes seeks a way beyond this cul-de-sac; her insistence to think the posthuman together with porosity, to consider a 'polluted', transversed human selfhood as a mode not only of survival but of life, is indeed more attuned to the ambivalence of skin itself and more promising of a sustainable vision.

In this context, the perspective of environmental health helps understand how historically contingent this bounded, untouchable "modern body" as "defined in medical textbooks, the body that is composed of discrete parts and bounded by the skin" (Nash 2006: 12) truly is. In *Inescapable Ecologies*, Linda Nash describes the changes in medical conceptions of the human body in terms of their relation to the environment. In this account, the 19th century emerges as an era acutely aware of the porosity and vulnerability of the human body, whereas the early 20th century saw an interlude of modernization during which advances in germ theory paradoxically led to a renewed emphasis on skin as a boundary. Nash cites Charles V. Chapin's 1910 publication "Sources and Modes of Infection" as a case in point, which suggested that "the environment no longer seeped into a body and shaped it in countless ways," instead treating skin as "an all-important barrier between the body and the larger environment that was breached only in certain, well-defined instances" (quoted in Nash 2006: 89). This

shift is intriguing insofar as it warns against too swiftly drawing the conclusion that an awareness of our skin's openness automatically entails a willingness to consider the human body as intrinsically networked into, say, microbial worlds. As a side note, it will be interesting to see how such developments will play out in the current context, as the entwinement of a two-pronged threat, pandemic viruses and the climate crisis, becomes ever more apparent. Yet Nash also makes the interesting point of how short-lived such a perception ultimately proved to be in the narrower field of medical history. The renewed focus on pesticides and toxins after World War Two in many ways paved the way for what Nash labelled an "ecological" (2006: 12) conception of the body, and is, indeed, closely aligned with recent concepts of a porous body in the environmental humanities.

Ecofeminist theorists such as Stacy Alaimo, Val Plumwood and Haraway have long pointed out that the tendency to "hyperseparate" (Plumwood 2002: 9) ourselves from natures beyond our own is deeply engrained in Western culture. Such inability (or unwillingness) to imagine one's own entanglement entails what Haraway describes as the "astralization" (2016: 36) of the bounded self, beyond the networks of consequence and interconnectedness of the world, a tendency which remains very much alive in everyday culture. Skin is still often considered to be, as Sarah Jackson phrases it, "at the forefront of identity" (2015: 3). Whilst the interrelation between skin and identity is not a key concern of my discussion here, it is worth noting that current authors of speculative fiction often swiftly undermine and subvert any expectations of a bounded selfhood which notions of 'hyperseparation' might imply. Indeed, the novella *The Deep* by Rivers Solomon with Daveed Diggs, William Hutson and Jonathan Snipes offers a glimpse into how closely entwined matters of identity can be with ecological questions. A re-imagination of the Middle Passage, it shares some of the oceanic themes which are so central to many biopunk authors, too. The authors create a world in which the babies of women murdered by slave traders, thrown overboard as troublesome cargo when in labour, are born from their mothers' dead bodies as sea creatures, part fish, part human, and have moved on to build an underwater civilization. Through the wajinru people, Solomon and their co-creators explore trauma and the (im)possibilities of building a new culture on the ruins of a history that is unbearably and viscerally violent; their protagonist Yetu, historian of her people, attempts to find a delicate balance between the burden of a history that might obliterate the individual, and retaining her distinct subjectivity. This is negotiated via her skin. A deepwater dweller, she communicates and navigates the world by sensing and emitting electrical currents through her scaled skin, feeling other's movements, their words and emotions on her very body. Skin, therefore, is fundamental to her being, but this creates openness rather than closure.

As the communal identity of these deepwater bodies in motion is as corporeal as the subjectivity delineated by her scaly skin, her existence is both enmeshed and exposed. Yet even when remembering feels akin to "making her body a wound again" (Solomon et. al., 2020: 2) "the pressure and the feedback" (Solomon et. al., 2020: 83) of constant connection in an ocean pulsating against her skin with the movements of her people is the core of her sense of connection, and, ultimately, at the root of her identity. Porous skins can therefore function as key sites of selfhood, yet this needs to be envisaged not as a barrier in the early 20th century sense which Nash references, but as an organic threshold of constant negotiation and exchange.

To ask with Haraway "[W]hy should our bodies end at the skin?" (1991: 178) therefore means situating human agency within a dispersed web of agentic matter. These "interconnected entanglements" (Haraway 1991: 102) challenge human subjectivities to constantly reposition and reshape themselves, a process to which skin is central. Theorists such as Alaimo or Karen Barad develop such "trans-corporeality" (Alaimo 2010: 2) into a concept of human embodiment that foregrounds entanglement, interconnectivity and non-hierarchical relationships. But transcorporeality does not mean that skin dissolves as a site of difference and delineation of subjectivity. Instead it seeks a differentiated, "multi-species becoming-with" (Haraway 2017: 28). This is a matter of urgency given that humanity's exposure to an ecological crisis is now newly apparent in the viral threats it engendered. Skin embodies both the danger of exposure and the desire for touch. It is a privileged and ambivalent site through which to explore these complex ethical and ecological challenges.

From Breakdown to Metamorphosis: Porosity as Gateway

"What if all organisms, including humans, are tangled up with each other?" (Tsing et. al. 2017: 1) Anna Tsing asks in the introduction to a volume exploring the potentials of monstrosity in conceptualizing a more sustainable vision of human life. Indiana's novel *Tentacle* (translated by Achy Obejas in 2018) explores precisely such entanglements. Set in the near-future of 2024, Indiana describes a Dominican Republic in the throes of ecological breakdown. The toxic aftermath of a tidal wave has left the Caribbean as a marine graveyard teeming with "unsalvageable corpses and sunken junk" (Indiana 2018: 12). In a connection between ecological and human health that seems especially poignant when read during the current pandemic, rampant viruses threaten human life as part of a species extinction which this speculative, yet eerily recognizable, world is facing. Indiana sketches a starkly divided society. While refugees are fleeing from the quarantine imposed on whole sections of islands such as Haiti, the privileged few have withdrawn into upscale residential blocks. Equipped with high-end alarm systems, the

entry checks of these gated residences are potentially lethal: they execute face virus scans and will release lethal gases on the vulnerable, only to then summon automatic collectors to deposit the body dead or alive "with all the diligence of a gluttonous child picking up dirty candy from the floor" (Indiana 2018: 9f). Thus cleansing themselves from the sick, and circumstantially also from the homeless, the mentally ill, or prostitutes, those who can afford it have erected secondary epidermic structures imbued with merciless agency. Equating immunity with impenetrability, this seems an alternative manifestation of Emiko's pore-less skin: ethically, both suggest life as necessitating a competition for survival between organisms whose boundaries are continuously to be reinforced, strengthened and activated for ruthless self-defence.

In itself, this layering of protective 'skins' is not an untypical trope in speculative fiction of this kind; to name just one example, Marge Piercy's 1991 novel *Body of Glass* also suggests that skin in all its forms – be it porous or impenetrable, organic or artificially engineered - becomes the prime site for exploring how to navigate a viral world. Equally set in a planet turned toxic, multinational corporations enclose their employees within artificial domes, offering a "safe fortress" (Piercy 1991: 8) from the "crowded violent festering warren of the half-starved Glop" (8), a labyrinthine, pandemic-ridden Megalopis that surrounds it. This collective skin serves as a social boundary as well as an ecological one, simultaneously barricading the corporate enclave from the 'raw,' a toxic landscape which bugs, vultures or rats might have successfully adapted to but "not people. Not songbirds, all dead, so the insects flourished and moved in waves over the land" (47).

From an ethical perspective, though, such security is callous. Piercy's protagonist Shira becomes increasingly aware how each individual's skin within this epidermic bubble functions as a site of bio-political disciplining, symbolizing the borderline space where outside control and any remaining strata of inner resistance meet. In the hierarchy of Y-S, confidence in the smoothness and security of your own skin thus signifies privilege, to be sought after and worked for: "the higher you were on the pyramid, the less you wore, the better to show off the results of the newest cosmetic surgery performed on your body" (135). Corporate control here acts as Foucauldian modern biopower, which seeks to "qualify, measure, appraise, and hierarchize" (1990: 144) life, and paradoxically requires bodily health to become docile even while claiming to foster and sustain it. Such "societies of control" (1992: 3), as Deleuze bitingly termed them in 1992, seek to create "manageable subjects" (Stapleton and Byers 2015, quoting Jonathan Crary: 2). The viral, often toxic environments of speculative fiction confront such bio-control with questions of exposure and survival. Skin therefore becomes a visceral site for exploring the ethical limitations of preserving life by means of

insulation. These pitfalls pertain both to the relation with the outside of an individual or corporate body – the inhabitants of the Glop who are left to fester and die in the toxic air, for instance - and its internal life: as her personal and emotional life is breaking "into bright dangerous shards that left her bleeding" (Piercy 1991: 42), Shira comes to embody the unseen scars within a body enshrined in the smoothest of skins, as the operations of insulation and self-defence leave her isolated, too, from her own most fundamental relationships.

Indiana's more radical vision changes the nature of skin from boundary to interstitial space by introducing a radically porous body into these fortressed housing cells. One of the self-protecting fenced-off residential fortresses is occupied – precariously so – by Acilde, a former prostitute pursuing the dream of becoming an Italian chef and, in the meantime, lifting weights to shape their body into a more masculine form. Thus they bide their time until they can afford to buy 'Rainbow Brite', a one-injection gender reassignment drug. With digital apps embedded in their skin, they sport some of the more expected trappings of a posthuman figure. More striking, though, is a different feature of their appearance: Acilde's forehead reveals a "crown of moles" (Indiana 2018: 51); these dark dots on their skin are not blemishes, nor mere marks – they are gateways between human, marine and pantheistic dimensions of life, although this is only gradually revealed. Esther, Acilde's employer, has not taken Acilde on as a maid because of their housekeeping skills; otherwise known as Omicunlé, Esther is a religious advisor to the president of the Dominican Republic and is named after the cloak that covers the sea, devoted to the Yoruba goddess of the ocean, Yemayá. Omicunlé has recognized Acilde by the crown of moles as Omo Olokun, "the one who knows what lies at the bottom of the sea" (83) and who is tasked with saving the ocean. Protected in her flat, her worship takes a scientific turn as she carefully monitors the life rhythms and nutrition of a rare surviving sea anemone. In the course of the novel, this sea anemone and Acilde enter into a symbiotic relation, which will shift the foundations of human embodiment, agency and subjectivity.

The entry point into such human-ecological symbiosis is the moment when the synthetic drug 'Rainbow Brite' is administered, in a conflagration of bio-technology, nonhuman ecology and the human body typical of this genre. In the moment of injection, Acilde's body begins to grow fluid; their skin seething and their breasts filling with "smoky bubbles," Acilde is shedding skin. The "wrinkled web that looked like gum around her nipple," once removed, reveals a "masculine skin" (49) growing underneath. In *Tentacle*, epidermic matter does not shield; instead, "making her stretching skin bleed" (49), it is transformative, able to reconfigure itself until it bestows new boundaries to a changed body, covering "every altered centimetre

of flesh" (50). This, however, is no surgically enhanced layer of protection. Indeed, Indiana evokes the idea of a secure epidermic layer only to subvert it even more radically than even her toxin-laden environments could; even in Acilde's new shape, their crown of moles remains and becomes the gateway for a human-animal symbiosis. In the most significant moment of the novel, Omicunlé's friend Eric attaches the sea anemone's tentacles to Acilde's moles. Once touching, "the tentacles stayed put, as though with Velcro" (51). Whilst Eric is already succumbing to the sea anemone's lethal poison, for Acilde, the marine creature's touch bestows new life.

This momentary union with the anemone opens up Acilde's selfhood to several temporal and spatial dimensions; channels emerge from their subjectivity, branching out into the pre-apocalyptic times of the year 1991 where Acilde is welcomed by the locals in Sosúa as the "Great Lord" (73) and envoy, having emerged through an oceanic cave of sea anemones from the "land of the beginning" (75). Whilst Acilde begins the work of preventing the ecological breakdown of the Pacific Ocean in the 1990s, their 2027 self –they are recognized with incredulity as "the little queer who's going to save the country" (81) – rests in the calm and relative comfort of a prison cell. This affords them the safety and time needed to shape their branched-off body into the identity of one Giorgio Menicucci, who works with his marine biologist wife to fund and conduct the research that would, eventually, "allow the Caribbean coral reefs to be repopulated in this shitty present" (123). Nevertheless, this is not a hero-saviour narrative: All of Acilde's increasingly numerous identities are sometimes grittily violent, sometimes slightly overwhelmed, sometimes self-indulgent, and never truly selfless. Yet this symbiotic, multiple body with its human, oceanic, and pantheistic offshoots is the most powerful source of agency within a world in seemingly incontrovertible breakdown.

Acilde's epidermic gateway in the novel's oceanic context suggests skin to form a key site for negotiating what Astrida Neimanis describes as the fundamental ambivalence of bodies of water: they oscillate between the collective thrust of being flood-able on the one hand, and the distinct qualities of each body on the other hand, as an "of me yet beyond me" (2017: 145). Such openness to uncontrollable incursions from other bodies entails utter unknowability and uncontrollability, challenging the ideas of agency and free will. Yet in this exposure to currents which are potentially unwelcome or life-giving inheres also a strong ethical call, to commit to a "collective worlding" (29). This echoes Barad's focus on "dynamics of intra-activity" (2008: 138) as an ethical basis for re-thinking porous being. Acilde's radically porous skin, vulnerable to toxins but equally open to the sea anemone's transformative fluids, becomes the gateway for exploring such ethical agency of transversed bodies. The moles open them to choice and change, which does not equate to salvation, but suggest that there is an agentic

dimension to the seemingly passive mode of exposure. Understanding skin as a zone of contact and exchange exposes the need for a posthuman ethics in Braidotti's sense, emphasizing "collectivity, relationality and hence community building" (2013: 49).

Indeed, this symbiotic body is advantageously positioned to address such an interpenetrated, enmeshed ethical agency. "Against the conceit of the individual, monsters highlight symbiosis" (2017: 3), as the editors of *Arts of Living on a Damaged Planet* suggest. Such a perspective on the monstrous as figure of ecological entanglement not only offers a pathway beyond the premise of bounded individuality as a core tenet of life: unsettling the centre stage position of the human, just as the anemone's touch unsettles Acilde, might also open an ethical pathway of living on a pandemic planet beyond the hierarchical, competitive zero-sum game of impenetrable selfhood. Understanding agency to emerge from within the entanglements of chimeric bodies like Acilde's suggests an ethics of living-with, akin to the biological "symbiogenesis, the comaking of living things" (2017: 8) which Tsing et. al. perceive in their symbiotic model of evolution.

To reiterate, such entanglement should not be misunderstood as an acceptance, or even a welcoming, of viral or toxic threats. What is so evocative about Indiana's speculative world is that the pantheistic, folkloric power of the ocean as deity moves hand in hand with the building of a laboratory that farms and replants coral in an effort to defend against toxins, and even Acilde's transformation is a co-creation between a synthetic drug and an organic marine animal. Entanglement does not demand the humble acceptance of the hemlock cup of viral and toxic poison, quite to the contrary: it is an ethics always "staying with the trouble," to quote Haraway's 2016 title, looking to foster human and nonhuman life in all its forms. Letting go of prioritising the human, in this sense, might give humanity the best chance of survival given our bodily make-up as assemblages of human, microbial and other matter.

The Touch that Cuts: Bioengineering and Symbiotic Community

If human bodies "can no longer be seen as fortresses to defend against microbial onslaught but must be re-envisioned as nested ecosystems" (McFall-Ngai 2017: 65) then skin, too, transforms. Speculative fiction like Indiana's does not merely ask whether skin need be impenetrable or porous in a wounded and wounding world – it poses the additional question of elasticity: might porous skin also stretch to incorporate and delineate not merely one subjectivity, but a symbiotic assemblage of beings? This, indeed, is the central question posed by Lai's *Tiger Flu*.

In the 22nd century world, which Lai creates in her 2018 novel, bio-engineering and symbiotic being have entered an unstable alliance. On its societal surface, Lai's

universe seems to move to the tune of moneyed interests, materialized in the world's two planets – fast-moving Chang and the slower Eng – which have replaced the natural cycles of the moon. Both Eng and Chang have been artificially launched into their circuits as sites of evacuation for humanity, in a project of colonization which, as one of the key initiators puts it, "was meant to be a humanitarian one" (Lai 2018: 55). These transhumanist 'LïFT' uploads expose the extent to which human life has become de-valued in this ecologically broken and pandemic-ridden near-future universe; men infected with the flu are the preferred test subjects, their addiction to 'tiger wine' intentionally fostered by the corporations to make them more easily exploitable. In forced uploads they leave their decrepit bodies behind to send their minds into an environment of promised verisimilitude, as docile corporate subjecthood is considered the only chance of survival for most.

Resistance to this seemingly absolute power of bioeconomic moneyed interests comes from an unexpected source: the "illegitimate offspring" (Haraway 1991: 151) of corporate clone factories have formed a 'Grist' sisterhood. They are deeply resonant with Haraway's cyborgs, being posthuman, radically embodied, and connected via processes of doubling and sharing instead of heterosexual procreation. Originally created by a clone company which "bust [us] from their greasy bottles like so many cheap genies" (Lai 2018: 20) all women in this community share the DNA of their original mother. Nevertheless, their voices in the novel are grittily distinct, with personalities clashing, so that one key baseline of their biopolitical impact becomes immediately apparent: they have escaped the 'sister factories' and successfully established their own communities, adopting the knowledge of artificial reproduction to use for their own purpose and against the cloning corporations who continue to hunt them down as a perceived threat to be contained in the upload operations. In their bodies and minds, a strong post-human agency evolves and spreads via the patterns of regrowth and shared bodily matter which they have developed to survive as a culture and community. Lai's Grist sisters thus embody resistance to the viral threat in this speculative world, to corporate control, and to any patriarchal patterns still present; they chart pathways for cultural and bodily survival in a lethally toxic environment.

The Grist sisters' skins are sites of cutting and sharing, thus radicalizing the idea of porosity to one approximating symbiosis, albeit in gritty and sometimes violent terms. Living in the forests and deeply immersed in the ecosystem they inhabit, the Grist sisters reproduce in a "long, lizardy love" in which "one becomes two" (21). In their triangulated communities of 'grooms,' 'doublers' and 'starfish,' each sister offers her own body to be merged and shared with the others, both to ward off the threatening forms their cloned bodies' mutations might take, and to procreate. Central to this is

the "loving transplant, the sexy suture" (21) as the groom cuts the starfish's skin to harvest bodily matter; this cut will close as the starfish's body re-grows the cut-out parts. This lizard theme is a typical trope of feminist posthuman theory; Haraway's cyborgs equally emerge from the regenerative power of salamander limbs. This is no coincidence; such creative "bestiality" (1991:152) frees the posthuman from the chains of the myth of a male creator, whether heterosexually reproductive, biblically divine or biotech engineer.

Lai thus transforms the poetics and erotics of touch to one of cuts. She juxtaposes the intimate and ephemeral nature of skin-on-skin contact, which, as Jackson argues with Derrida, remains committed to "a certain untouchability" which "lies at the heart of a text on tact" (2015: 6), with a much deeper, fiercer and certainly more desperate form of contact. Skin, in this radical form, does not bound subjecthood but momentarily delineates a bodily unit which can be opened to be multiplied and shared. While Indiana's anemone touch opened subjecthood to fork into multiple bodies that still retain a sense of integrity in and off themselves, Lai suggests shared embodiment. If this touch-as-cut were to still include what Jackson posits as the "différance of the between'" (2015: 6) inherent in touch, then such distance, in this fictional world, does not describe the in-between of two bodies coming into contact. Instead, this interval exists between the different stages of such contact, the "having and holding. Slicing and stitching" (Lai 2018: 20) in which the community "split, we slit, we heal, we groom" (Lai 2018: 20) until they escape the control of the company which created them. This complexity is reflected in the accompanying sensations of both pain and sexual pleasure, a "craving to be cut again" (21) which still needs to be enhanced by a drug to alleviate the pain. Nevertheless it would be wrong to misread this apparent ferocity as a lack of ethical subtlety; not only do the novel's 'grooms' constantly grapple with the sustainability of their cuts, balancing their need to foster others' lives and bodies with the needs of their starfish lovers, they also use cuts to create nipples for mothermilk, to feed their young, in a tenderer manifestation of the same procedures.

Lai thus proposes skin to be a site through which individuals open themselves to enable others to live, a process celebrated by the erotic experience which accompanies the cutting. Yet pain is stitched – and the stitching is literal – into the fabric of this community, as Lai's speculative universe is broken down to such a degree that tenderness that is just the touch without the cut is simply not an option any more. The despair and the need to hold the constantly threatening violence and exploitation at bay, both of which are inherent in this form of communal embodiment, make this perhaps a chilling vision of porosity radicalized into shared embodiment. However, it is steeped in a culture of seeding, growing and harvesting more generally, as the Grist

sisters are enmeshed as carers of not only each other's bodies but also of the forest environment in which they live.

It is time to return to the ethical impulses with which I started this article; both novels I explored treat a "transcorporeal" (Alaimo 2010: 12) way of life as the only viable source of ethico-political agency, which works to sustain, not to infect or exploit. Disinterested in seeking to transcend the human body into a transhuman, self-glorifying narcissistic consciousness, Lai's and Indiana's figures acknowledge that the life that sustains them does not, as Braidotti puts it, "bear your name" (2013, 138). The posthuman subject in this sense is the post-humanist subject, in that it is nomadic and multiple instead of unitary, and relational instead of striving towards supremacy. Their stitched-up bodies "*act* in ways that jostle or jolt" (Alaimo 2000: 12) the apocalyptic paralysis created by both corporate biopower and the pandemic in Lai's dystopian vision. Their wounded yet living and life-giving bodies suggest an "ethics of mattering," as Barad advocates, which "is not about right response to a radically exterior/ized other, but about responsibility and accountability for the lively relationalities of becoming of which we are part" (2007: 393). Such a body politics fully embeds human life in other human, posthuman and non-organic matter, yet this entanglement it not a passive stance; it is an active choice, often painfully so, to navigate and channel such enmeshment in ways that sustain their flawed and precarious life in an environment teeming with viral threats.

Porous skins in speculative fiction thus unsettle the false dualities of inside and outside, self and other, human and nature, advocating the necessity to move beyond such conceptions as a precondition sustaining life. Yet their insistence on different forms of agency – however gritty and imperfect they might be– also charts pathways beyond the doom-laden paralysis, the foreclosing of any horizon of possibilities, that apocalyptic science fiction narratives sometimes entail. While porosity "often does not discriminate against that which can kill us," and might create "strange and toxic bedfellows" (2008: 198) as Nancy Tuana warns, speculative fiction explores ways in which such exposed skins can be inhabited creatively to foster human and nonhuman life and culture in pandemic environments. Such a posthumanism, thus, addresses the very basis for any change: the agency to imagine and shape the future instead of merely managing its potential risks. The bubbling, cut and scarred skins in the imaginative play of these texts overcome not the human body per se, but its dual and mutually exclusive nature.

The ethical call for agency inherent in these texts is therefore of a deeply situated, subjectively positioned kind. Embodied and embedded, they express what Braidotti describes as a "partial form of accountability, based on a strong sense of collectivity,

relationality and hence community building" (Braidotti 2013, 49). Lai's and Indiana's visceral fictions, however, also expose how such relationality is as ambivalent as the sensation of inhabiting porous skins in a crisis-ridden planet per se. Being entangled and transversable changes how action and consequence are experienced, because it inescapably enmeshes any agent in the outcomes of their choices. Both authors thus cut through the conditions which cushion political actors from accountability, making unthinkable the very idea of exploitation as an act that might lift the exploiter to a space safely above the destruction wrought. The calls to respond to such enmeshed realities, however, are met by an agency that is perhaps necessarily flawed. Even as the illusory narrative logic of heroes and villains, of saviours and destroyers is revealed to be a blindfold to the ecological realities of being human, and thus is swiftly discarded, these authors' call for response is also a caution to accept the flawed nature of human viewpoints. When reconfiguring connections to find alternative ways of being embodied in a post-capitalist, pandemic and ecologically broken world, Acilde or the Grist Sisters inhabit their skins as tricksters, chimeras. Their reality is a mixed, monstrous, mingling one. The quest of the blockbuster sci-fi hero to vanquish alleged villains has been turned on its head and emerges as a muddled, imperfect search for ways to respond to a destruction so pervasive it remains under the radar of any such simplistic plotlines and character types.

Interestingly, Elizabeth Outka starts her work on the flu pandemic a century ago by noticing how few literary traces this devastating experience seems to have left, "drowned out by its overwhelming scope" (2019: 2). She explores how a different way of reading modernist texts, focused on fissures, fragments, affects and sensations might reveal the hidden epidemic context. Perhaps the enmeshed and porous bodies of biopunk characters work on a comparable narrative project of articulating ways to respond to a pandemic and ecological breakdown, which similarly challenges conventions of plot and characterisation. Situated at the point when the "slow violence" (Nixon 2013) of climate breakdown turns urgent and catastrophic, such fictional speculations suggest that this very imperfect agency, so aware of its own limitations and flaws yet insistent on staying in the writhing grounds instead of lifting off into space, offers a more sustainable model of ethical agency on a broken planet.

Competing Interests

The author declares that they have no competing interests.

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