

**Navigating the Posthuman: The Sentient Spaceship as a  
Popular Culture Trope (1941-2020)**

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**Thesis Submitted for the Degree of Doctor of Philosophy**

**Dublin City University**

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**April 2024**

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# **Navigating the Posthuman: The Sentient Spaceship as a Popular Culture Trope (1941-2020), Iuliia Ibragimova**

## **Abstract**

Over the decades of its presence in science fiction (SF) megatext, the sentient spaceship trope, started by James Blish's short story "Solar Plexus" (1941), has developed variations, including mechanical, human, nonhuman animal and AI elements. The merging of the ontologically diverse elements in sentient spaceships' bodies creates an intersection of different aspects of otherness, providing a common ground for the exploration and comparison of the attitudes to the cyborg, the animal other, and the technological other, encapsulated in SF narratives. Selected SF short stories, novels, series, films, and TV shows, featuring sentient spaceships and delving into their subjectivity, are analysed through close reading, and putting these works into genre, historical, and social contexts.

The dissertation applies posthumanism and new materialism as critical lenses. Rosi Braidotti describes the drive to challenge traditional dualisms and anthropocentric premises as central for posthumanism. The sentient spaceship blurs boundaries between the human and nonhuman, the body and mind, nature and culture. Donna Haraway's concepts of companion species and kinship are employed to analyse relations between the human and the sentient spaceship, and relations between different species within sentient spaceships' bodies, interrogating the anthropocentric perspective. The interaction of sentient spaceships and humans are indicative of the presence of the nonhuman agency, which is contemplated engaging with Karen Barad's agential realism and Jane Bennett's vibrant matter. The dissertation classifies sentient spaceships according to the elements their bodies contain and follows the evolution of the attitudes towards the human and nonhuman expressed through the trope. The trope starts with the human as a central element in Golden Age SF, situating humanness as the main parameter, against which the value of the other is defined. Later works venture into more diverse representations where anthropocentrism is criticized, and more equal and just ways of human/nonhuman interaction are explored.

## **Acknowledgements**

The work on this project was sponsored by DCU School of English (2019-2021) and the Government of Ireland Postgraduate Scholarship (2021-2023), for which I am immensely grateful. Without the financial support of these organizations this project could not have taken place.

I would like to express my heart-felt gratitude to Dr Paula Murphy, whose inspiring guidance, thought-provoking conversations, and advice inspired to me reach for a new depth of research in this project; her emotional support was also of great help through all the stages of the project.

My thanks also go to the staff of DCU School of English, especially Dr Keith O’Sullivan, Dr Sharon Murphy, Dr Jim Shanahan, and Dr Gearóid O’Flaherty, whose encouragement and attention to my project helped it blossom to the best of its ability. I also extend my gratitude to Susan Byrne, School Assistant, for being there to help me with the administrative nuances.

My huge gratitude goes to Ailise Bulfin and Michelle O’Connell, my professors during my MA studies in UCD, who believed that I could do my PhD and gave me not only wonderful recommendation, but also words of encouragement. Ailise Bulfin, the supervisor for my MA thesis, was also a major influence in shaping me as a SF researcher, which I appreciate with all my heart.

I am deeply grateful to Professor Sherryl Vint for accepting the role of my external examiner. She made the viva a truly exciting event, and the discussion during the viva opened new perspectives and roads for development of this research. Her commentary on this dissertation is of great value to me.

Ted, my husband and partner, deserves more thanks that can fit in here for watching all the SF films and TV shows, as he not only suffered through all my self-doubt and self-depreciation, but also found encouraging words for me when I felt down. He also inspired

me to look at the subject of my dissertation from different perspectives, without which my research would have been lacking.

I am infinitely grateful for Gwendolyn Moore and Freya Dasgupta, whose friendly presence throughout these years made my journey much more pleasant than it could have been. Discussions with Gwen contributed greatly to my understanding of theory and American pop-culture. Freya gave me a perspective of a completely different research sphere - theology, which enriched this dissertation in unexpected ways.

My gratitude to my family, thousands of kilometres away, can hardly be expressed in words; they believed in me, supported me through this journey, and encouraged me to always follow my dreams. It was also unexpectedly pleasant when they last year suddenly decided that my research was really something worth doing.

These years would not be the same without my fellow PhD students at School of English and School of Theology, Philosophy, and Music, with whom I shared office and a lot of conversations, which constituted an important part of my PhD experience.

Lastly, a big thank you to anybody reading this.



## Introduction

The sentient spaceship is a multifaceted trope, which embraces several staples of science fiction (SF) megatext, including cyborgs, bioengineered nonhuman animal species, and superintelligent AIs, and inadvertently involves a discussion of the relations of the human and the nonhuman world.<sup>1</sup> The remarkable versatility of materials comprising various combinations of the sentient spaceship provides a rich material for the analysis of ontological boundaries, their porosity, their making and erasing, and their implications for either sustaining or challenging the anthropocentric paradigm. The development of the trope reveals not only a growing variability of the materials that comprise the sentient spaceship, but also a closer attention to the connections these materials form with each other and their mutual impact, allowing the sentient spaceship to blossom as a metaphor for Earth. Like Earth, the sentient spaceship is an interconnected assemblage travelling through space with limited resources and a result of interaction of human and nonhuman agencies, where the former does not take a hegemonic position.

Defining a spaceship as “sentient” implies a capacity for judgement, presence of subjectivity, emotional reactions, and agency, simultaneously avoiding the connection with human sapience and anthropocentric hierarchy it entails.<sup>2</sup> According to Donald M. Broom, “a sentient being is one that has some ability: to evaluate the actions of others, in relation to itself and third parties, to remember some of its own actions and their consequences, to assess risks and benefits, to have some feelings, and to have some degree of awareness.” (131) Lori Marino unpacks sentience as three interrelated “domains”: self-awareness – a “sense of [...] personal identity”, meta-cognition – an ability “to reflect upon one’s own thoughts and

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<sup>1</sup> SF is teeming with recognizable clichés, proving the legitimacy of Brian Baker’s statement that “we know science fiction when we see it,” as well as showcasing the vision of SF as the “megatext,” the concept that Damien Broderick, science fiction and popular science writer, adapted to SF from the theoretical work by Christine Brooke-Rose on fantasy. (Baker 8, Gordon 110) The megatext presents a range of themes, tropes, settings, and plots, pertaining to the genre; space travel, time travel, aliens, robots and other futuristic ideas and settings comprise the SF megatext. (Gordon 110, Evans 47)

<sup>2</sup> Within the SF fandom and critical environment, several terms are used to refer to this variety of spaceships; “sentient spaceships”, “sapient spaceships” and “living spaceships” occur more often.

feelings”, and theory of mind, including “perspective-taking, modelling of others’ mental life.” (132) These definitions, coming from scholars focusing on animal welfare advocacy, foreground human and nonhuman animals, however, the sentient spaceship, which SF narratives endow with these characteristics, also include spaceships without an organic component, spreading the idea of sentience to the fully mechanical entities. The extension of the idea of sentience in this manner provides a complex challenge to human exceptionalism and subjugation of the other.

The sentient spaceship inhabits the space opera, growing in complexity and imaginative array along with the subgenre itself from the pulp magazines and fixup novels, where all combinations of the sentient spaceship originate, to series, which have the space to explore both alternative subjectivities of the hybrids and the connections they make with the human and nonhuman world.<sup>3</sup> The progress of space opera aligns with the essence of SF as a genre. Characterising SF, Brian Baker, a literary critic, notes that it “is always in flux, it is a contested ground,” highlighting its capacity for mutating, shapeshifting and becoming more. (2) The speculative worlds of SF, ripe with opportunities for breaking and blurring ontological boundaries and questioning hierarchies, make the genre attractive for posthuman critics and feminist scholars, who use them in their works as examples. Rosi Braidotti states: “Low cultural genres, like science fiction, are mercifully free of grandiose pretensions – of the aesthetic or cognitive kind – and thus end up being a more accurate and honest depiction

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<sup>3</sup> Space opera has long been considered a part of the pulp tradition and was not let into the realm of literary science fiction. Both Judith Merrill and Darko Suvin, prominent SF critics, refuse space opera a place in SF canon, suggesting its insufficient plausibility. Merrill, in the essay on defining SF, states: “For purposes of this discussion, I am not considering the space adventure story, the transplanted western or historical, as science fiction at all.” (27). Suvin, analysing poetics of SF, continues the discussion of the place of space opera with theoretical justification: “Anything is possible in a fairy tale, because a fairy tale is manifestly impossible. Therefore, SF retrogressing into fairy tale (e.g., “space opera” with a hero-princess-monster triangle in astronautic costume) is committing creative suicide.” (119) However, SF critical discourse notes a significant development in space opera over the decades. Gery Canavan and Gary Westfahl note the emergence of new space opera, characterised by postmodern features. Gary Westfahl writes: “If a new form of space opera is developing, it is represented by the texts occasionally termed postmodern space operas. One might provisionally characterize these works by listing some common, but not universal, features. Stories aspire to the epic scope of classic space opera but may be tempered by a hard-edged cynicism, deeper than the self-serving pragmatism of Ruritanian space opera, or even grave pessimism about humanity's future. Instead of featuring only humans and humanoid aliens, authors embrace extreme variety in forms of intelligent life - humans, aliens, machines or combinations thereof - crafted by evolution, technology or bioengineering.” (205)

of contemporary culture than other, more selfconsciously ‘representational’ genres.” (“All Too Human” 203) The potential of SF to explore hybridity in “a more accurate and honest depiction” is traceable in the evolution of the sentient spaceship trope, embedded into ever more sophisticated imaginary universes, where existing patterns of relations and attitudes are scrutinized and questioned. In her milestone essay “A Manifesto for Cyborgs” (1985), Donna Haraway discusses SF works, mentioning one of the early sentient spaceships – McCaffrey’s brainship Helva, setting the trend this dissertation follows in applying posthuman critique to the trope. The increasing complexity of the themes, plots, and social issues space opera engages with, the diversity in protagonists’ gender, race, and species, is directly reflected in the sentient spaceships; their designs, engagement with other agents, and the ethical dimension of their relations with the human and nonhuman have grown more varied and intricate, justifying the relevance of this dissertation.

The sentient spaceship is a posthuman image, both as a product of technological progress overcoming the limits of the human flesh and as a part of the more-than-human world, making the debated meanings of the term “posthuman,” teetering on the edge of posthumanist and transhumanist critique, intersect.<sup>4</sup> In her “Transhumanism/Posthumanism” entry in *Posthuman Glossary*, Francesca Ferrando concisely explains the difference between transhumanism and posthumanism through the difference in understanding the “posthuman.” She writes:

[W]ithin the transhuman literature, the term ‘posthuman’ refers to a stage which might evolve after the current transhuman era. On the other side, according to posthumanism, the posthuman can be seen as a paradigm shift which is already occurring by approaching and performing the human in the post-humanist, post-anthropocentric, and post-dualistic ways. (439)

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<sup>4</sup> Neil Badmington notes that the term posthuman introduced as *post*-Human by H. P. Blavatsky in 1888 and used by many prominent philosophers in the twentieth century, has obtained high currency since the beginning of the twenty-first century. (Badmington 1344)

The “posthuman” in the sentient spaceship is chimeric and mutable enough to render both transhumanist and posthumanist reading of the trope applicable, transhumanist features prevailing in the earlier works analysed in the dissertation, while the posthuman as a condition of connectivity between the human and nonhuman world blossoms in later works. The analysis of the trope dwells on both on the transhumanist and posthumanist visions of the posthuman but sees posthuman critical theory as the main theoretical approach of the dissertation.<sup>5</sup>

The sentient spaceship trope starts with the sentient spaceship, obtained through merging the human brain with the spaceship body; the resulting hybrid possesses the rapid reactions of the human and power and durability of the machine, lauding the posthuman condition in a transhumanist sense. Hava Tirosh-Samuelson writes in her historical review of transhumanism: “In the 1980s, Max More [...] formalized a transhumanist doctrine, advocating the “principles of extropy” for continuously improving the human condition.” (23) It strictly delineated the orientation of transhumanism towards technology as a means of extending human lifespan and modifying the human. Despite the introduction of transhumanism as a term to define this philosophical approach, the intersection of meanings in the “posthuman” and, consequently, posthumanism persisted. For instance, as Cary Wolfe notes, UK critics like Neil Badmington lean towards the vision of posthumanism through the figure of the cyborg, as introduced in Haraway’s “A Cyborg Manifesto” in *What Is Posthumanism?* (xiii) The closeness between this vision of posthumanism and transhumanist thought is perceptible in certain definitions of posthumanism. For instance, Jonathan Murdoch, contemplating the connections and differences between humanism and posthumanism, writes:

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<sup>5</sup> Posthumanism is an umbrella term for several theoretical approaches united by the challenge to humanism and anthropocentrism, and deconstruction of the liberal humanist subject. They include critical posthumanism, philosophical posthumanism, posthuman critical theory, and speculative posthumanism, to name a few. This dissertation proceeds from their definition given in *Posthuman Glossary* by Stephen Herbrechter (“Critical Posthumanism”), Rosi Braidotti (“Posthuman Critical Theory”), David Roden (“Speculative Posthumanism”) and in *Philosophical Posthumanism* by Francesca Ferrando.

[A]cademic posthumanism derives from two main sources: first, the presumed emergence of a posthuman condition, that is, a world made up of hybrid objects, heterogeneous networks, and fluid identities [...]; second, a form of theorising that aims to deliver new critical insights into contemporary social conditions so that new ('distributed') forms of subjectivity might be established. (1357)

This dissertation, however, follows the definitions of posthumanism that are suggested by Wolfe, and Braidotti, formulated in a way that foregrounds the complexity of nature-culture continuum where the human is entangled in the nonhuman world.<sup>6</sup>

The sentient spaceship entails the inevitable hybridity, breaching the boundary between the human and the nonhuman by attributing agency and subjectivity to an entity that is either not fully human or nonhuman altogether; in itself, the sentient spaceship constitutes a challenge to anthropocentric hierarchies, invoking main foci of posthuman critical theory. Braidotti writes:

Posthuman critical theory unfolds at the intersection between post-humanism on the one hand and post-anthropocentrism on the other. The former proposes the philosophical critique of the Western Humanist ideal of 'Man' as the allegedly universal measure of all things, whereas the latter rests on the rejection of species hierarchy and human exceptionalism.<sup>7</sup> ("Posthuman Critical Theory" 339)

The merging of the human and machine in the sentient spaceship trope reveals the porosity of the boundaries of the self and its openness and susceptibility to the influence of the

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<sup>6</sup> Wolfe describes posthumanism as "com[ing] before and after humanism," detailing this statement: "[B]efore in the sense that it names the embodiment and embeddedness of the human being in not just its biological but also its technological world, the prosthetic coevolution of the human animal with the technicity of tools and external archival mechanisms [...]. But it comes after in the sense that posthumanism names a historical moment in which the decentring of the human by its imbrication in technical, medical, informatic, and economic networks is impossible to ignore." (xv)

<sup>7</sup> Braidotti analyses the liberal humanist subject in *The Posthuman*, drawing parallel to the Vitruvian Man, who is depicted as a white, able-bodied male, speaking standard language. The heterosexuality is implied, taking into consideration systematic oppression and marginalisation of homosexual individuals. The issue of language relates to colonial discourse where capacity to understand the language of the coloniser which the colonised lacked was considered an indicator of humanness. Thus, difference from the Humanist subject casts other groups of humans as lesser beings, including those different in race, gender, sexual orientation, and native language. (*The Posthuman* 63-65)

technological other; it blurs the boundary between the body and the mind, accentuating the impact of the material and questioning the disembodied nature of reason, advocated by the Enlightenment and humanism.<sup>8</sup> The human-machine combination of the sentient spaceship foregrounds the post-humanist aspect of posthuman critical theory inquiry. In addition to the critique of the liberal humanist subject, nonhuman organic and fully mechanical sentient spaceships expose the exploitative practices applied to the nonhuman world, represented both by the nonhuman animal and the technological other. It addresses the aspect of posthuman critical theory countering human exceptionalism and speciesist views by setting the human as a part of an interconnected network of agencies driving the nonhuman world. Blurring the boundaries of the liberal humanist subject and questioning anthropocentric hierarchies with sentient and agential nonhuman entities, the sentient spaceship provides a platform for a complex analysis of the attitudes towards the human and the nonhuman, exposing patterns and considering alternatives for the interactions between them.

For the integrity of the analysis of the sentient spaceship trope, it is essential to recognize the critique of posthumanism as a philosophical stance. Posthumanism, with its focus on decentring the human, rejects the anthropocentric premise, remaining within the Western paradigm; as a part of this very paradigm, it is imbued with the habitual erasures of difference, for instance applying “Anthropos” and “human” to all population of Earth. Zakiyyah Iman Jackson draws attention to this limitation, pointing out philosophical origins of posthumanism: “Posthumanism’s past and, arguably, ongoing investment in Europe as standard-bearer of ‘Reason’ and ‘Culture’ circumscribes its critique of humanism and anthropocentrism because it continues to equate humanism with Enlightenment rationality and its peculiar representation of humanity.” (673) Most of the works considered in this

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<sup>8</sup> Braidotti contrasts the body/mind distinction to Spinozian monistic view, writing: “A ‘monistic universe’ refers to Spinoza’s central concept that matter, the world and humans are not dualistic entities structured according to principles of internal and external opposition. The obvious target of criticism here is Descartes’ famous mind-body distinction, but for Spinoza the concept goes even further: matter is one, driven by the desire for self-expression and ontologically free.” (*The Posthuman* 56)

dissertation were created within the Western cultural paradigm and inherently share this limitation. To provide for a different perspective, the dissertation engages with works written by authors whose origin gives them an insight into other cultural paradigms; the *Universe of Xuya* by Aliette de Bodard, a French-Vietnamese author, is based on Chinese, Mexican and Vietnamese cultures, while Nnedi Okorafor's *Binti* novella series focuses on Sub-Saharan Africa.

The body and its formative influence on the mind and subjectivity, indicative of the porosity of the body/mind boundary and traceable in the sentient spaceship, draws attention to the materiality of the embodiment, justifying the application of new materialist critique in the analysis. In "On Touching – The Inhuman That Therefore I am," Karen Barad writes: "Thinking has never been a disembodied or uniquely human activity." (154) Sentient spaceships' thinking processes and subjectivity depend on their material bodies, eroding the boundaries of the born and the manufactured, the human and the animal, and exposing the insufficiency of the dichotomic vision to analyse their hybridity and complexity. Stacy Alaimo explains theories existing within the framework of new materialist thought in "New Materialisms" and writes: "[N]ew materialisms – as critiques, complements, extensions, or reframings of social constructionist, postmodern, and poststructuralist theories – all insist upon the significance and agency of materiality and the inter- or intra-actions across the primary dualisms of western thought." (177) The sentient spaceship, a hybrid entity, is a part of the nature-culture continuum, forming physical connections and entanglements with other human and nonhuman agents, and is often represented as an assemblage of different agencies rather than a monolithic entity with solid boundaries of the self.

Though posthumanism constitutes the main theoretical lens, the analysis of the trope requires the use of additional lenses, like gender studies and affect theory; gender studies give an insight into the relations of power, permeating the construction of the image of the other, while affect theory fortifies the nonhuman turn in considering the hybridity of the

sentient spaceship. The discussion of gender, sex, sexuality, and reproduction of the sentient spaceship constitutes an important part of analysis of the trope and the power structures it leans on or criticises. The human-machine and fully mechanical sentient spaceships foreground the distinction between biological sex and gender, accentuating the performativity of gender, which prompts the engagement with Judith Butler's influential essay "Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory." Gendered attitudes and expectations are transferred on the sentient spaceships without the human component, however, the challenge to these expectations become more prominent through the porosity of gender boundaries in fully mechanical sentient spaceships and through arbitrary application of binary gender as applied to the spacefaring animal, whose gender can diverge from the human paradigm. Affect theory provides a toolkit for a deeper analysis of the sentient spaceship's subjectivity, connecting the emotional life of humans and nonhuman animals, and movement and intensity of the nonhuman world. Defining affect, Gregory J. Seigworth and Melissa Gregg in "An Inventory of Glimmers" state: "The affect is found in those intensities that pass body to body (human, nonhuman, part-body, and otherwise), in those resonances that circulate about, between, and sometimes stick to bodies and worlds." (1) Their definition highlights the power of the affect to cross the ontological boundaries of the human and the nonhuman uniting them in one resonating system and showing them as a part of a network rather than isolating the human. These additional theoretical approaches enhance the analysis of the trope, assist in determining trends of the trope development and contribute to the posthumanist challenge to dichotomic boundaries and anthropocentric hierarchies that the trope has a potential to pose.

There is an abundance of sentient spaceships in the SF corpus, however, the space and time allowed for this dissertation limits the number of examples that can be analysed closely, requiring to make representative selection of the major trends in the trope's development. Firstly, this dissertation looks only at works that have English as their original



language. This limitation, nevertheless, still affords diversity, engaging with works of authors from the US, Britain, Australia, and Canada, as well as authors with French-Vietnamese and Nigerian-American backgrounds. Secondly, the dissertation engages with SF literature, film, and TV, excluding animated films, video games, and comics. Thirdly, the dissertation aspires to analyse examples adding original features to the trope and accentuate milestones in the trope evolution, while retaining a balance in analysing different combinations of the sentient spaceship. Lastly, the selection takes into consideration gender balance and diversity in authors, making sure that, where possible, works by women, especially women of colour are represented in the dissertation. Recognising the limitations imposed by the format, the dissertation endeavours to give an outlook on the trope that is both detailed and balanced covering most notable developments, mindful of changes that SF authors' demographics experienced in 1941-2020.<sup>9</sup>

The analysis of the sentient spaceship trope through the eighty years this dissertation covers necessitates the application of close reading, comparative and historical analyses to classify the variations of the trope, define the main trends and draw parallels with philosophical and historical contexts. Close reading is instrumental in analysing vocabulary, linguistic framing and connotations surrounding the sentient spaceship, which reflect the role and function of the sentient spaceship in the narrative, and the spectrum of attitudes it engages. Comparative analysis of the material obtained through close reading exposes recurrent themes permeating the works under analysis and contributes to classifying the sentient spaceships and formulating the trends influencing the trope development. The materials, of which sentient spaceships' bodies consist, underlie their classification into three groups – the human-machine combination, the organic sentient spaceships, and fully mechanical sentient spaceships, which are analysed individually in chapters one to three.

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<sup>9</sup> In Appendix A, Table 1 represents the corpus of works from which the selection was made, while Chart 1 indicates the gender and origin of the authors, engaging with the sentient spaceship trope.

Within these chapters, the recurrent themes – bodies of the sentient spaceship, gender, sexuality/reproduction, and emotions, – form subsections revealing parallels and differences in the evolution of the trope with a cross reference to the materials comprising the sentient spaceship design. As the dissertation covers works from a long period, historical analysis makes sure that close reading of the works takes into consideration the historical context of the analysed works and attempts to avoid pitfalls of critiquing recent works more favourably due to the application of posthumanism as the main theoretical lens. Wolfe writes:

[A]ny historicism needs to confront the difference between historicity and historicism – that is to say, the difference between the material, institutional forces it is interested in and the modes and protocols of knowledge by which those materials are *disciplined*, by which they are given *form*: protocols that are, by definition, always already reductive. (*What Is Posthumanism?*106, emphasis original)

Being aware of this difference, the dissertation pulls on the interconnected trends in history, science and technology development and philosophical trends, shaping the sentient spaceship trope, for explanatory power, rather than imposes a different “mode and protocol” of posthumanism on them.

The analysis of the sentient spaceship trope’s development in this dissertation goes in two directions; the first investigates how the composition of the spaceship influences the spectrum of issues considered by the trope, and the second makes a general survey of the works selected for analysis focusing on a specific aspect of representation, namely technology in the sentient spaceship trope and ethical issues which are engaged through the sentient spaceship. Structuring the dissertation in this way provides for both appreciating differences in each combination and time of publication, as well as tracing common traits and trends that accompany the trope’s evolution. Each chapter contributes to the understanding of the trope with its own selection of themes and theoretical perspectives,

keeping, however, the focus on the posthuman in the sentient spaceship. Chapters One to Three follow the chronological order of appearance of the respective combinations.

Chapter One is dedicated to the human-machine combination of the sentient spaceship, centring on the investigation of the influence of the merger of the human and the machine on the perceived humanity of the hybrid. The Chapter covers two short stories, including the first short story to feature the sentient spaceship – James Blish’s “Solar Plexus,” and three series, including Anne McCaffrey’s Brainship series, the protagonist of the first instalments of which Haraway mentioned in “A Manifesto for Cyborgs.” The main question that shapes the investigation of the combination is how human is the human-machine hybrid? The earlier combinations centre around the human, even though some of them deny the resulting entity the full humanity of an unmodified human. The later combinations decentre the human, either reversing the prosthetic relations between the human and the machine, making the former an enhancement of the technological other, or casting the resulting hybrid as a nonhuman entity where neither human nor the machine takes priority. This progression displays the ongoing questioning of the anthropocentric hierarchies, challenging the human as the centre of the design.

Chapter Two turns to the organic sentient spaceships, foregrounding relations between humans and nonhuman animals, playing out the consequences of the anthropocentric paradigm in treating the other. Despite the focus on the nonhuman animal component of the combination, the organic sentient spaceship sometimes includes the human, for instance the first organic sentient spaceship in Robert Sheckley’s “Specialist,” and more recent works analysed in the chapter – Elizabeth Bear and Sarah Monette’s “Boojum,” and Nnedi Okorafor’s Binti Series, where a human eventually becomes a part of the spacefaring animal. In addition to these works, the Chapter analyses Stephen Baxter’s Xeelee Sequence and two TV shows, the latter expanding the scope of the dissertation to visual representations. Like the human-machine combination, a trend in decentring the

human from the hegemonic position of power arises in later works, criticising the assumption of human superiority and total control over the nonhuman animal.

Chapter Three looks at the fully mechanical sentient spaceship and engages with the concepts of the machine takeover and superintelligence, contemplating the agency of the matter and challenges to anthropocentric hierarchies coming from the inorganic agent. The first and the most recent works analysed in the Chapter present alien sentient spaceships – the first fully mechanical sentient spaceship in Fred Saberhagen’s Berserker series and the alien technology inducing the development of sentience in spaceships, but unrelated to AI, in S.K. Dunstall’s Linesman series. The Chapter also considers three variations of human-designed sentient spaceships, including the cult figure of HAL 9000. Starting with the image of hostile machines, the later examples challenge the idea of the AI takeover, envisioning a utopian society run by the machines, or cooperation between the human and the machine, which challenges anthropocentric hierarchies, sometimes to the extent of toppling them altogether. The trend towards imagining a non-anthropocentric paradigm of relationships between the human and the nonhuman persists in the chapter, drawing parallels with previous chapters.

Chapter Four considers the attitudes to technology as expressed through the sentient spaceship trope in all the works analysed in the previous chapters, determining trends that align with liberal humanism, transhumanism and posthumanism. Technology unfalteringly makes an appearance in the works featuring sentient spaceships, either as a product of human or alien design or as a way of interacting with the environment on the part of spacefaring animal. Bringing together all the works in one chapter provides for detecting common trends in the portrayal of technology in different works; these trends are heavily influenced by the period when the works were published and released, with liberal humanist and transhumanist trends frequent in the earlier works and posthumanist features springing in later ones. The awareness of these trends observed through connecting and comparing the works spread over

the period of eighty years makes the exceptions and irregularities more visible and compelling for the analysis. The chapter considers techno-anxious and techno-optimistic attitudes connecting them to liberal humanism and transhumanism and contemplates representations of technology as a part of the nature-culture continuum relying on the posthumanist critique.

Chapter Five takes a similar approach as Chapter Four, discussing the ethical issues raised in all the works analysed in the dissertation. The chapter focuses on the issues of mistreatment, marginalisation, and limitation of rights and freedoms, arising out of the hierarchical relations between the human and the nonhuman. It analyses the exploitative and extractive practices applied to those who are perceived as less human or diverging from the liberal humanist ideal. Depending on the combination, the ethical contemplation of the sentient spaceship ventures into different avenues. For instance, the human-machine combination becomes a way to explore the issue of disability, including the freedom of people with disabilities to decide their embodiment or their right to life. The human-machine and the organic sentient spaceships share the concern over the experimentation and the extractive practices applied to living beings. The exploitative relations formed between the human and the nonhuman world are central for the discussion of organic and fully mechanical sentient spaceships. Though the issues taken up in different works are varied there are common trends that provide for determining trends and shifts, questioning the anthropocentric hierarchies and attitudes predicated on these hierarchies.

The development of the sentient spaceship over eighty years represents an uneven landscape of rises and falls of different trends, reflected in the different combinations of materials and value systems expressed in the works featuring the trope. Even though the dissertation focuses on detecting the posthumanist trends challenging the liberal humanist ideal and anthropocentric hierarchies, it also pays attention to the humanist and transhumanist views shaping the worldview in many analysed works. The variety of the

materials that the sentient spaceship can incorporate provides for a comprehensive outlook of the relations between the human and the nonhuman world, and the place of the human in the nature-culture continuum. The contemplation of this place in the works featuring the sentient spaceship trope not only reflects the current patterns, but also gives visionary scenarios of shifting consumerist and destructive practices applied to the nonhuman world and preventing marginalisation of the other, regardless of the human or nonhuman origin of this other.

## Chapter One: The Human-Machine Sentient Spaceship

The imaginative flight of the sentient spaceship starts with merging the human with the mechanical hull; the result of this merger proves to be able not only to transverse fictional open space, but also make a leap out of the limiting boundaries of dichotomies, dividing the human from nonhuman, the born from manufactured, nature from culture. The exploration of possible designs, embracing different degrees of the organic presence of the human in the mechanical embodiment, and combinations of the human elements and virtual existence, shuffles the position and share of the human element, starting from human-oriented designs and continuing into the twenty-first century with foregrounding the nonhuman. The human-centred bodies of the sentient spaceship express both the anxiety of the monstrous union of the human and the technological union, and the transhumanist sentiment of body enhancement, bringing in polarly differing attitudes towards the technological hybridization of the human material. The decrease of human presence in the combination, with the humans serving as either a source material for a new entity or a peripheric element, entails a challenge to the anthropocentric premise, emphasizing the agential potential of technology. The analysis of the treatment of humanness and nonhumanness in the human-machine sentient spaceship relies on recurrent topics in their portrayal: their bodily structures, their gender, sexuality, and emotional experiences, which define the sections of this Chapter. This analysis both intends to show how human the hybrid is and how important it is to be human in the respective universes, laying basis for considering the interplay of anthropocentric hierarchies and challenges to them in the sentient spaceship.

The Chapter dwells on several works, representing the development of the human-machine combination of the sentient spaceship, focusing on the significant changes in the combination or reflecting a transition in the attitude to it. These works are Blish's "Solar Plexus" (1941, 1952); Anne McCaffrey's Brainship Series (1961-2004), paying special attention to *The Ship Who Sang* (1969), "Honeymoon" (1977), "The Ship That Returned"

(1999), and Anne McCaffrey and Mercedes Lackey's *Ship Who Searched* (1992); George Zebrowski's "Starcrossed" (1973); Ann Leckie's Imperial Radch Trilogy (2013-2015); and Aliette de Bodard's The Universe of Xuya Series (2007-present), focusing on "Shipmaker" (2010), "Shipbirth" (2011), "Ship's Brother" (2012), "The Waiting Stars" (2014), *The Tea Master and the Detective* (2018), *Seven of Infinities* (2020).<sup>10</sup>

The infringement of multiple dichotomic boundaries in the bodies of human-machine sentient spaceship invites the posthumanist perspective, applying theoretical approaches by Haraway, Braidotti, Katherine N. Hayles, to the cyborg, fluid borders of traditional dichotomies, and agency. Jane Bennett's new materialist perspective is applied to discuss the human-machine assemblages and the distribution of agency within them. The focus on emotional responses solicits the engagement with affect theory, relying on Brian Massumi, and cognitive psychology, as presented in works by Keith Oatley, and Jennifer M. Jenkins.

## **1. Bodies and Embodiments**

Imagined structures and designs of human-machine sentient spaceships harbour a rich material for the analysis of the treatment of the body/mind dichotomy, contrasting the transhumanist and posthumanist philosophical approaches. The body/mind dichotomy implies a hierarchical split between the mind and the body, the former serving as a locus of human personality and essence, while the latter is seen as an organic prison. Arising out of religious and mystical traditions and formulated by Descartes in *Discourse on the Method*, this vision of the body/mind relations shapes humanist tradition and blossoms in transhumanist aspirations to transcend the limits of the flesh.<sup>11,12</sup> Martine Rothblatt, explaining the idea of mind-cloning in "From Mind Loading to Mind Cloning: Gene to Meme to Beme," summarises this idea of disposability of the organic body: "I do this [...]"

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<sup>10</sup> Short summaries of all the works analysed in the dissertation are provided in Appendix B.

<sup>11</sup> For a deeper exploration of the history of the dichotomy, see N. Katherine Hayles's *How We Became Posthuman* (1999), especially "Toward Embodied Virtuality."

<sup>12</sup> For a detailed account on transhumanism and its quest for immortality through a whole brain simulation, see Mark O'Connell's *To Be a Machine* (2017), especially chapter titled "Once Out of Nature."



to invite those who shudder at the idea of the human not remaining an exclusively biological animal to consider a possible future in virtuality within which mind or minds could exist.” (114) Posthuman scholars’ challenge to the impenetrability of boundaries of traditional binaries includes the analysis of the body/mind division. In *How We Became Posthuman*, Hayles warns about the erasure of the body and privileging disembodied mind and urges for a posthuman vision, which recognises the intricate connection and inseparability of the material body and consciousness:

[M]y dream is a version of the posthuman that embraces the possibilities of information technologies without being seduced by fantasies of unlimited power and disembodied immortality [...] that understands human life is embedded in a material world of great complexity, one on which we depend for our continued survival. (5)

The quest for “disembodied immortality” fuels some of the designs of the human-machine sentient spaceship, namely those where a human brain directly connects to a mechanical ship body. They align with transhumanist real-life projects of cryogenic head preservation or whole-brain simulations, both of which presuppose that body is a disposable irrelevant vessel for the mind, concentrated in the brain. Designs where a whole or rudimentary human body comprises an integral part of a sentient spaceship engage deeply with the close connection of body and the mind, the influence of embodiment on subjectivity, falling on the posthumanist side of the argument. Following this conceptual distinction between designs, this section has two subsections, the first of them dwelling on brain-to-ship connections in “Solar Plexus” and “Starcrossed,” and the second – on entities formed by the body and ship in the Brainship series, The Universe of Xuya Series, and the Imperial Radch Trilogy.

Roles allocated to the human in the entity and their philosophical implications for the anthropocentric worldview prompt another line of analysis of the bodies of human-machines sentient spaceships. Anthropocentrism, the vision of the human as a pinnacle of creation, defining humanist thinking, is a point of contention for posthumanist scholars.

Braidotti, setting out the principles behind critical posthumanism, cites environmental theory as one of its inspirations and notes: “Environmental theory stresses the link between the humanistic emphasis on Man as the measure of all things and the domination and exploitation of nature and condemns the abuses of science and technology.” (*Posthuman* 48)

Bodies of the human-machine sentient spaceships centring on the human and accommodating human needs perpetuate the anthropocentric vision, embedded in the humanist and transhumanist philosophical traditions, prioritising the human, and rendering technology as a tool. When the human component cedes its hegemonic position, it presents a meaningful challenge to the anthropocentric paradigm, giving a glimpse of non-hierarchical relations between human and nonhuman agents. Human-centric designs feature in “Solar Plexus,” “Starcrossed,” and the Brainship Series; the design of Radch spaceships displaces the human body to the periphery, making it an appendage of the AI; the mechanical-organic entity of a mindship in the Universe of Xuya series employs the human tissues and materials forming a complex entanglement infringing multiple boundaries of traditional dichotomies.

### **1.1 Brain-to-Machine Connection**

A direct connection of the human brain to the mechanical body of the ship situates the human brain as a control centre of the whole ship, casting the mechanical body as an instrument of augmentation, exposing both the ultimately anthropocentric vision of the relations of human and technology and the transhumanist premise underlying this variation of combining the human and the machine in a sentient spaceship body. Persistent presence of this variation in SF accompanies its blossoming in real-life cybernetics discourse; for instance, the Macy Conferences (1946-1953) actively discussed of the role of the human in different feedback loops and systems.<sup>13</sup> In “The Psychological Moment in Perception,” a

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<sup>13</sup> The Macy Conferences were a set of interdisciplinary meetings, where scholars presented their on-going research. It was sponsored by Josiah Macy Jr Foundation in 1941-1960 to promote cooperation between different branches of science, especially in medicine. Cybernetics was both the most discussed topic (eleven

paper delivered in 1949, John Stroud analyses decision-making in a system, consisting of human operator and servomechanisms, determining the central position of the human as a source of decision, and posing a question: “What kind of machine have we placed in the middle?” (41) The formulation of the question aligns with the period’s progress of computer design and AI technologies: the speed and volume of information flow in the human brain far exceeded the existing computing devices and automatic-response system capacities. Simultaneously, it equates the human and machine, suggesting that the human can be disassembled into parts, and these parts can be exchanged and replaced for either expansion of or even transcendence beyond the limits of flesh, ultimately sustaining the body/mind boundary and hierarchy.

Blish’s “Solar Plexus” has two versions, one published in 1941, the other – in 1952; in both versions the human brain is placed into the control panel of a spaceship, establishing its position as a decision-making centre. In both versions, Murray Bennett, a renegade scientist and antagonist of the short story, intends to improve the spaceship’s performance by surgically creating “hundreds and hundreds of nerve-to-circuit connections” between his brain and the electric wiring of the spacecraft. (Blish *Astonishing* 86, *Human* 208) This surgery does accelerate the spaceship’s reactions, with impulses perceived “directly, not through the instruments,” referencing the concurrent state of computer science and development. (*Astonishing* 87, *Human* 209) The versions diverge, however, in describing the effect of the merger on Bennett’s personality: in 1941, the resulting entity is a powerful and intelligent enemy, retaining the human intelligence, while in 1952, the technological part, though enhancing the organic original, enslaves and obliterates the human individuality. The first version makes human arrogance the cause of the Bennett-*Astrid*’s fall: his confidence in his full control over the situation allows his unmodified captives find the

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conferences out of nineteen) and featured scholars from the most diverse branches of science. Claus Pias, the editor of *Cybernetics: The Macy Conferences 1946-1953. The Complete Transactions*, notes in his introduction “The Age of Cybernetics”: “Although aspects of cybernetics can be traced back to various points in history, the proceedings of the so-called Macy Conferences [...] represent its modern foundational document.” (11)

vulnerability of the spaceship's design. The second version assumes that technology takes over the human in the coupling, robbing Bennett of emotions, comprehension of motivations, and purposefulness, associated with humanness, leaving the technological other devoid of all those qualities.<sup>14</sup>

Zebrowski's sentient space probe follows the pattern of brain-to-machine connection but complicates it by imagining a composite brain consisting of tissues from different human sources, including parts of artificial human brain, which both witnesses a closer attention to subjective experience of a human-machine hybrid and exacerbates the dangers of the cyborg existence. In "Starcrossed," the MOB, "Modified Organic Brain" "[floats] in a nutrient bath," with some parts dormant until the mission begins, while the rest manages routine tasks.<sup>15</sup> (Zebrowski 237, 238) A malfunction near the end of the journey results in the disconnection of "his right side, the human-derived portion of the brain core." (238) When the lost part resurfaces, it regains its memories of previous life: images, emotions, and sensations, and triggers the process of self-consciousness and self-identification in the other part. The introduction to human feelings and experiences conflicts with the proper functioning of a mechanical entity and results in the MOB's death. In Zebrowski's terms, the mere experience of being a human undermines the success of the cyborg project.

The dichotomic divide between the brain and the body fuels the conceptual design of sentient spaceships in both short stories, however, Blish and Zebrowski seem unconvinced by the promise of disembodied existence of the human brain.<sup>16</sup> The contrast between the two

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<sup>14</sup> Contemplating the issue of the other, Braidotti writes: "The dialectics of otherness is the inner engine of humanist Man's power who assigns difference on a hierarchical scale as a tool of governance. All other modes of embodiment are cast out of the subject position and they include anthropomorphic others: non-white, non-masculine, non-normal, non-young, non-healthy, disabled, malformed or enhanced peoples. They also cover more ontological categorical divides between Man and zoo-morphic, organic or earth others." (*Posthuman* 68) Technology, a separate ontological category, forms another category of others – technological others.

<sup>15</sup> Zebrowski's sentient spaceship resembles a Bracewell probe, a space probe specifically designed for space exploration and establishing the first contact with alien civilizations. (Freitas 251)

<sup>16</sup> Contrastingly, many examples, including Thomas N. Scortia's "Sea Change," or in Dennis E. Taylor's *Bobiverse Series*, argue for the possibility of separating the body and the brain without losing the personality of the original human. "Sea Change" is also the first short story giving an optimistic account of human-machine merging in a sentient spaceship.

versions of “Solar Plexus” testifies to the shift in Blish’s views: while in the first version, mechanical embodiment does not change Bennett, in the second, he cannot remain human without the human body. In Zebrowski’s short story, the disembodied composite brain in a “nutrient bath” recreates the experience of embodiment by imagining human bodies and influencing brain tissue with electric impulses to imitate corporeal sensations, exchanging its virtually immortal existence for a death caused by the indulgence to a bodily fantasy. Zebrowski shares the awareness of the organism-wide transformations that occur in the cyborgian modifications of the human body with Thomas N. Scortia, his co-author of “Unholy Marriage”, the introduction to *Human-Machines: An Anthology of Stories about Cyborgs* which they co-edited. They see the union of the human and machine forming the cyborg as “a condition transcending humanity,” but recognise the effects of embodiment on subjectivity, citing the example of endocrine system, the intervention in which can cause changes in personality. (Scortia, Zebrowski xvi, xiv) Contemplating this opposition in “Starcrossed,” Zebrowski simultaneously argues for the irreplaceability of human experience in a mechanical body and for the unreliability of technology when combined with the organic tissue of human brain. Thus, both short stories question the body/mind dichotomy, showing the potential faultiness of the technological embodiment, which in “Solar Plexus” erases the human, and is irreversibly undermined by the humanness of its organic parts in “Starcrossed.”

## **1.2 Body-to-Machine Connection**

The designs of the human-machine sentient spaceships where a human body – either whole or rudimentary – connects to the mechanical spaceship offer more options for placing the human in the combination, giving a platform to interrogate both the role of technology and the anthropocentric premise, underpinning the brain-to-machine connection. Structural diversity of conceptual designs spans from the human in control of prosthetic technology in McCaffrey’s series to the human as a replaceable part with a periphery service function in

Leckie's AI spaceships and invites the complexity of blurred boundaries with the entangled unity of De Bodard's mindships, where the human participates in forming the entity, fulfilling a crucial, but non-hegemonic role. Decentring the human not only questions hierarchies that privilege the human over the technological other and allocates technology a prosthetic function, but also hails the emergence of a subjectivity pointedly different from the human, contemplating issues of nonhuman agency.

The anthropocentric vision underlies the design of sentient spaceships in McCaffrey's Brainship series, where technology is an instrument directed by human volition to create mechanical bodies for new-born intellectually capable humans with severe physical disabilities. Pending their parents' agreement, these children become shell-people and spend their first years in small cyborgian bodies, to be assigned with a mechanical body of a spaceship, space station, or city after their initial training.<sup>17</sup> (McCaffrey *The Ship Who Sang* 2-3) Despite the implication of disembodied brain connected to the mechanical ship body in the title of the series, shell-people have rudimentary human bodies, encased in non-transparent columns, situated in the control rooms of their machinic bodies, in the metaphorical centre of the operation. The body-machine connection, where the human controls the whole organic-mechanical entity, conceptually revisits Stroud's "man-in-the-middle," the daring reversal of the protagonist's gender aside. Despite nuances in rendering the technological other's potential and the difference in subjectivity of the human-machine hybrids in different instalments of the series, the series does not question the ultimate value of the human and is ideologically invested in proving that shell-people are as human as their unmodified human counterparts.

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<sup>17</sup> The cost of all surgeries, maintenance of mechanical parts of their bodies, these bodies themselves, and early care is covered by Central Worlds, a government-like organization; shell-people are required to repay this debt by working for Central Worlds. This financial arrangement reveals a highly exploitative and discriminatory treatment of people with disabilities, which is discussed Chapter Five.

Shell-people's mechanical bodies are sophisticated augmentations, developed not only to sustain the life of people with disabilities, but also to overcome the limits of human flesh, aligning with the premise of transhumanist transcendence. In "In Defense of Posthuman Dignity," Nick Bostrom suggests: "[H]uman enhancement technologies will offer enormous potential for deeply valuable and humanly beneficial uses," while maintaining: "[N]ature's gifts are sometimes poisoned and should not always be accepted." (56, 57) Bostrom's statements summarize the idea behind shell-people: their original body is a "poisoned gift," remedied by "enhancement technology." Both Zoë Sofoulis and Sue-Ellen Case mention the positive prosthetic function of the mechanical body in *The Ship Who Sang*, the former discussing female writers whose work on cyborgian and virtual embodiments precedes mostly male cyberpunk representations, the latter contemplating different functions of cyborgs in SF narratives.<sup>18</sup> (Sofoulis "Virtual Corporeality: A Feminist View" 60, Case 96) Indulging a transhumanist dream, shell-people do not need food or sleep, require little maintenance, and have a lifespan longer than an unmodified human.<sup>19</sup> (McCaffrey *The Ship Who Sang* 10) Shell-people's sensory perception features enhanced vision, hearing, and uses additional tools, like tools to analyse the chemical composition of air, but they do not have sense of smell, touch, and taste, and cannot see their own body. These deficiencies represent the price the human pays for technological augmentation, for reaching beyond the limits. (McCaffrey *The Ship Who Sang* 4, 1; *Unicorn* 281) These differences in perception shape an alternative subjectivity, making the question whether shell-people are humans or not a recurrent theme in the series.

AI spaceships in Leckie's Imperial Radch Trilogy shift the vector of prosthetic relations between the human and technology, as the human element in them serves as an

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<sup>18</sup> The idea of technology as a positive prosthesis traces its roots to modernist tradition, as Tim Armstrong analyses in *Modernism, Technology and the Body: A Cultural Study*.

<sup>19</sup> Later instalments, including *The Ship Who Searched*, discussed later in the chapter, introduce a four-hour mandatory sleep for shell people, which is still less than an average human needs.

extension of functionality and perception for the AI running the spaceship, which challenges the established hierarchy in the human-machine relations. AI spaceships of the Radch, a space empire of Leckie's universe, are complex entities, consisting of a controlling AI, hardware of the ship and multiple human proxy-bodies, called ancillaries. Ancillaries are humans, technologically enhanced with implants to make them faster and stronger than un-augmented humans. These implants also erase humans' personalities, memories of past lives, and previous identities, making their bodies a receptacle for the AI's knowledge and perception.<sup>20</sup> Ancillaries, representing ships' AIs in interactions with humans, act as both household servants for independent human crew and a maintenance team for tasks AIs cannot perform themselves, thus extending AIs' physicality. They are also military contingent for imperial colonization, taking the brunt of planetary invasion missions.<sup>21</sup> The conglomerate of bodies, both mechanical and human, of a Radch AI spaceship, form complex relations where technology is used to enhance a human body and a human body, in turn, becomes a positive prosthesis for an AI. This complexity problematizes the straightforward anthropocentric hierarchy, switching the locus of control and revealing both ontologically different agents as lacking.

The exploration of lacking technological and organic bodies in the Imperial Radch Trilogy advances the idea of connectivity and complementarity of different agencies acting in assemblages rather than individually. Bennett discussing "agency of the assemblage," states: "Assemblages are not governed by any central head: no one materiality or type of material has sufficient competence to determine consistently the trajectory or impact of the group." (24) As an "open-ended collective," a Radch AI spaceship is a fluid entity where parts are exchanged when damaged or outdated, where the human element is an expendable

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<sup>20</sup> Ancillaries are made from "non-citizens," "uncivilized" humans from planets that have just been colonised by the Radch. The exploitative and violent erasure of memories, personalities, and cultures is a commentary on colonization and its consequences, the discussion of which is developed in Chapter Five.

<sup>21</sup> The identities of the soldier and servant and their association with the technological other are discussed in Chapter Five.



appendage, nonetheless crucial for creating the entangled unity of the sentient spaceship. (Bennett 24) AI ships have an unlimited lifespan and an access to learning capacities and knowledge, unimaginable to usual humans, store memories of millennia; they are also “armed ships, with engines capable of vaporizing planets,” powerful even without ancillaries. (Leckie *Justice* 338) However, ancillaries enhance spaceships’ sensory experience in ways essential for both maintenance and development of AI spaceships’ personality and emotional experience, which is discussed in the subsection on emotions of this chapter. The intricate connection and interdependence of AI spaceships and their ancillaries counter dichotomic distinctions between the human and the nonhuman and constitute a posthuman entity that cannot be reduced to its parts.

Like other examples in this chapter, mindships’ bodies in the Universe of Xuya comprise mechanical and human elements, however, the way the human-like rudimentary body, combining optics and organic tissues, and mechanical body are merged erases the prosthetic relation and hierarchies arising out of them. Other analysed works imply that ships’ human or mechanical components can be divided, replaced, or exchanged, while the design in de Bodard’s series implies a unity, where all the parts contribute to the creation of a hybrid assemblage, the other, whose experience cannot be reduced to human. In “The Shipmaker” (2010), a short story describing the creation of a new spaceship, “the Grand Master of Design Harmony” engineers and supervises the construction of a mechanical body for a new ship, using feng shui – Chinese principles of harmony between different elements, and procuring materials from other ships. This recycling of traditional practices and used materials links the past, present and future in a mindship, establishing continuity: “The sections outside couldn’t be forced together. They had to flow into a seamless whole – to be, in the end, inhabited by a Mind who was as much a part of the ship as every rivet and every

seal.” (de Bodard, “The Shipmaker”)<sup>22</sup> A ship’s mind is a partially human foetus engineered specifically to connect to a spaceship and born out of a living human womb; it “quickness” the ship and allows the whole entity to travel in “deep spaces.” (De Bodard *The Detective and Tea Master*) The mind and ship are created for each other and cannot be separated or reused as a whole if they fail to connect. This connection cannot be reduced to the relations of prosthesis, as their existence depends on each other and the dependence is mutual, evening out both the mind/body and human/machine hierarchy in the hybrid.

The human-machine sentient spaceships with the full or rudimentary body connection to the mechanical body interrogate body/mind dichotomy, paying a close attention to the influence of the body on the mind and the crucial role of their interaction in shaping subjectivity. The body/mind border in these designs is porous and permeable, allowing endocrinal processes, affectual and emotional states, as well as aliveness of the matter comprising the bodies to define mental state and reflect on decision-making. Massumi in *Politics of Affect* takes Anne Whitehead’s understanding of mentality “as the capacity to exceed what is given and to bring forth a novelty” concludes that the body, even without the brain possesses a degree of mentality, relying on Darwin’s example of earthworms, which “breaks down the Cartesian distinction between the mental and the physical, but without simply collapsing them into each other, or bracketing one out.” (178-179) The composite bodies of McCaffrey’s brainships, Leckie’s AI spaceships and de Bodard’s mindships are not mere combinations of matter: they are a site of creative energy, a site of becoming machine, becoming more-than-human, becoming other.

*The Ship Who Sang* and “Honeymoon” interrogate the body/mind boundary by pinpointing the ways in which brainships’ bodies influence their minds, and accentuating the

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<sup>22</sup> The Universe of Xuya starts as an alternative history series, following changes far into the future and mainly takes place in three future empires: Mexica, China (Xuya), and Vietnam (Dai Viet). While earlier works feature mainly Mexican and Chinese protagonists, in later instalments de Bodard focuses on Vietnamese locations and characters.

changes that an embodiment, combining the human body and a mechanical ship, entails for subjectivity. Shell-people's human bodies are sustained by nutrient fluids, indicative of the intricate unity of the mechanical and the organic. Acidity of these fluids affects moods and decision-making, collating the organic structures of the body, its mechanical parts, and the ethereal substance of the mind into a single process of creating consciousness and subjectivity. For instance, Helva, the protagonist of *The Ship Who Sang*, "Honeymoon," and "The Ship That Returned," blames the increased acidity of her nutrient fluids for choosing an exceptionally unsuitable scout-partner, referred to as a "brawn." (McCaffrey *Ship* 176) Likewise, her levels of acidity need an adjustment after her sense-deprivation captivity and separation from her mechanical body. (192) The recognition of these intricate connections challenges the independence of the mind, grounding it in the body, its substances, and reactions to external circumstances, both challenging the traditional dichotomy and building the human into a network of agential interactions with the environment.

Contemplating the body-mind relations, McCaffrey employs the frequent SF trope of consciousness transfer, only to show how embodiment shapes the mind and subjectivity, demonstrating the effects of a different body on perception and personality. Helva experiences an alternative embodiment – the Corviki "envelope" during her missions to Beta Corvi, a planet with methane-ammonia atmosphere where human bodies cannot survive. (McCaffrey *Ship* 134) The envelope allows humans and shell-people to function on the planet and communicate with its inhabitants, the Corviki, and causes contrasting emotions in its users. Able-bodied humans find it stressful and undesirable, while people whose body fails through disease or old age are delighted with it. Chadress, a retired scout employed for the Corviki mission to be Helva's temporary partner, opts for staying in the envelope rather than going back to his ageing body and human life, describing feeling the envelope body as giving a "velvet, soft, deep, a very pleasurable tactile sensation" and "a sense of unlimited power." (146) Likewise, Solar Prane, another participant of the mission, dying after a life-

long suffering from full gravity intolerance and low bone density, and Kurla, his medical assistant and lover, prefer the opportunities the envelope embodiment provides to their human bodies. (108) Helva, as well as the rest of the company, finds this alternative embodiment “somehow unclear,” “loose [...] at the same time compressed.” (145) On the second visit to Beta Corvi, Helva sees Chadress, Prane, and Kurla again, and their changes and assimilation with their envelopes makes them indistinguishable from Corviki and, thus, not human. (McCaffrey “Honeymoon” 302) The Corviki envelope, made possible through a technique premised on the divisibility of the mind and body, eventually only proves the intricate interdependence and mutual influence of the poles of the traditional dichotomy. It also offers a subtle critique of the able-bodied paradigm, which urges to correct a disabled body to fit the traditional idea of norm. Not only Helva refuses to see her body as lacking, her perception of the envelope coinciding with that of the able-bodied part of the crew, but also refuses to take the able body abandoned by Kurla, reiterating her acceptance of shell-person embodiment.

Even though the starting point of the mindship’s design and appearance in de Bodard’s *The Universe of Xuya* is a rudimentary human body, the interconnection and interdependence of elements, comprising the mindship’s body, blurs the boundaries and hierarchies arising out of the body/mind dichotomy. The series retains the comparison of the rudimentary human body with the centre, referring to it as the “ship’s mind,” but time and again accentuates the unity that all the components form. For instance, “The Waiting Stars” (2014) recounts a story of a mindship, captured by the Galactics/Outsiders and rescued by her family.<sup>23</sup> She is one of many captured mindships, whose damaged bodies are stored in a secured territory in space, while their minds are electronically transferred to human bodies on Prime, the capital planet of the Galactic Federation. Their memories are erased, making

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<sup>23</sup> The Galactics, to whom the residents of Dai Viet Empire of the Universe of Xuya refer to as “the Outsiders,” are citizens of the Galactic Federation, a space federation formed by people of mainly European descent.

them think that they are human children intended to birth minds. To be integrated into the Galactic society, they are educated in a special religious facility and assigned to jobs, avoiding any connection with spaceflight. Unable to fight their sense of alienation and desire for open space, they commit suicides, repeatedly restarting their lives in new human bodies. The invincible aspiration to fly among the stars reflects the connection to the original spaceship body, that cannot be exterminated by the Outsiders' colonial presumption of what is best for the mindships.<sup>24</sup> The incongruity of their human bodies and Galactic experience to their true form makes their life unbearable: "There was a feeling--the same feeling she'd had when waking up as a child, a diffuse sense that something was not quite right with the world, [...] that she was not wholly back in her body." (De Bodard "The Waiting Stars" 12) The inability to adapt to human life, the constant physical, bodily sensation of wrongness, even the vague memories of the mindships' takeover that survive all the memory tampering reveal the unity of the mind and body, the definitive role of the body, decentring and dethroning the mind.

In the Imperial Radch Trilogy, porosity of the body/mind dichotomy can be gleaned through the changes in perception predicated on the coupling of AI, mechanical body, and ancillaries' bodies effective both for the mechanical and human parts of the entirety of the sentient spaceship. The controlling AI experiences the influence of the human bodies on its subjectivity, both when ancillaries function as a part of the whole spaceship assemblage, and when the AI and the human body are only the remaining parts of a destroyed ship, like Breq, the protagonist of the trilogy. The ship perceives itself as a complex whole: "Ancillaries are human bodies, but they're also part of the ship. What ancillaries feel, the ship feels. Because they are the same." (Leckie *Sword* 45) The blurring of the mind/body boundary coming from ancillaries lies in their potential to influence the behaviour of the whole ship, even though

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<sup>24</sup> The colonial premise underlying the relations between the actors of political stage of the Universe of Xuya and predetermining the attitude to mindships as abominations on the part of the Outsiders, is considered in Chapter Five.

they are a replaceable part, seemingly completely controlled and engrossed by the AI. For instance, when Anaander Mianaai, the Emperor of the Radch, to whom all the Radch ships are personally loyal, orders to execute Lieutenant Awn, who is the favourite of One Esk decade of *Justice of Toren*, the ship sedates the whole decade in a failed attempt to save both its life and its crew.<sup>25</sup> The sedation is intended to tackle the severe physical and emotional reaction to an order conflicting with personal emotions of One Esk. Knowing that the reaction will inhibit its functionality, the ship takes an action on preventing it, even though this action is not fully successful, as One Esk Nineteen, blessed and doomed to survive, still experiences the consequences of the order and the ship's actions:

The guilt and helpless anger that had overwhelmed me had receded at that moment, overcome by the urgent necessity, but now I had time to remember. My next three breaths were ragged and sobbing. For a moment I was perversely glad I was hidden from myself. (Leckie *Justice* 252)

The intricate connection of emotions, the effect of sedatives on the human body and the AI resolution to save herself and the crew creates a complex unity of factors, contributing to the survival of one piece of *Justice of Toren*, challenging the body/mind boundary through the presence and influence of all multiple parts of assemblage on the outcome of events.

The shifting position of the human in the overall constructions of the human-machine sentient spaceships, as well as the union of the mechanical, human, and virtual elements in their bodies situate humanness of the sentient spaceship as a touchstone for all series. While McCaffrey's Brainship Series insists on the inherent humanness of brainships, the Universe of Xuya and the Imperial Radch Trilogy see sentient spaceships as pointedly nonhuman. In *The Ship Who Sang*, Helva, after her encounter with drug runners and sense-deprivation

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<sup>25</sup> *Justice of Toren* is the ship, of which Breq is the sole surviving ancillary. In this thesis, three names are used to indicate different configurations of *Justice of Toren*. The whole spaceship – with the AI and ancillaries, – is referred to as *Justice of Toren*. Twenty ancillary bodies – a decade on a Radch AI ship, – functioning in Ors, are One Esk. One Esk Nineteen is the ancillary segment functioning during the events leading to *Justice of Toren's* destruction. Leckie italicises all the names of the ships and the dissertation retains the italics.

torture, refuses to partner with Teron, her unreliable brawn, as he does not consider her human. In the last encounter, she challenges him: “Unreliable organism, am I? Illogical, irresponsible, and inhuman...” (McCaffrey *The Ship Who Sang* 197) Likewise, *The Ship Who Searched* accentuates the humanness of brainships through their human ingenuity, which the novel contrasts to AI spaceships’ inability to adapt to complex real-life situations. This insistence upon humanness of brainships aligns with the human centrality, and the prosthetic role of technology, even though the image of brainships, especially in *The Ship Who Sang*, harbours a more-than-human potential. In contrast to it, Radch society initially sees AI spaceships as “piece[s] of equipment”, without any claim to humanness, and AI spaceships do not protest the established order. (Leckie *Justice* 307) The culmination of the series, however, challenges the anthropocentric hierarchy as the Radch AIs are recognised as a separate nonhuman species, which is Breq’s way to protect both humans and nonhuman in the Athoek and Ghost systems: “As far as the humans here are concerned, I might as well be human. But I’m not. That being the case, there’s no question in my mind that we AIs are not only a separate species from human, but also Significant.” (Leckie *Mercy* 304) With this statement, Breq claims agency for AIs, asserting equal significance of all sentient species in the more-than-human community of the universe. Unlike brainships and the Radch AI spaceships, both of which have control codes of the access, Xuyan mindships are fully autonomous entities, rejecting anthropocentric hierarchies and prosthetic relations within the human-machine sentient spaceship body. The Universe of Xuya series also denounces attempts to prove the humanness of mindships, recognising their difference from both humans and technological others. As an accidental neural merging of a human and a ship is a starting point for research into engineering a mind, the Xuyan Minds are partially human, but their later development brings more nonhuman elements and renders the human form

that they are forced to use in “The Waiting Stars” insufficient.<sup>26</sup> The prevailing rejection of humanness in the sentient spaceships in this group is a call for recognition of other sentient lifeforms, regardless of their organicity and origin, which undermines the vision of the human as a pinnacle of creation.

The more-than-human experience of hybrid embodiment is accompanied by the replacement and enhancement of habitual senses, both through artificial sensors and additional sensory inputs, through which a different subjective experience arises. Hayles, describing the posthuman experience of “the human-computer interface” as the expansion of the cognitive system, accentuates the materiality of the bodies, both organic and non-organic involved in the cognitive process: “[I]t is not a question of leaving the body behind but rather of extending embodied awareness in highly specific, local, and material ways that would be impossible without electronic prostheses.” (*How We Became Posthuman* 291) In sentient spaceships where a human body connects with a mechanical spaceship the radical extension of experience comes through polyproprioception, predetermined by proxy bodies.<sup>27</sup> In *The Ship Who Searched*, a novel Mercedes Lackey was hired to write to continue the Brainship series, the protagonist obtains a sense of touch through a synthetic body. Ancillaries in the Imperial Radch Trilogy provide the AI spaceship with the experience, and the process is mutual as each ancillary feels the whole ship and other ancillaries. In contrast to physical bodies of the Brainship Series and the Imperial Radch Trilogy, the source of de Bodard’s mindships’ extended awareness are virtual projections, which provide not only visual and audial information, but also olfactory and tactile sensations interacting with data in the feed. The range of possibilities of extended awareness emphasises the

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<sup>26</sup> The accidental merging of the human and ship resulting in the emergence of the first mindship is described in de Bodard’s “Starsong” (2012).

<sup>27</sup> Polyproprioception is a term coined by John Scalzi in his 2014 novel *Lock In*, denoting an ability to perceptually be in two places simultaneously. The application of this term to the experience of Leckie’s AI spaceships and their ancillaries is taken from Eleanor Gold’s chapter in *Future Humans in Fiction and Films*, titled “Mindclones, Ancillaries and Cyborgs: Technologies of the Split Self in Transhumanism and Other Science Fictions.” (152)



multifacetedness of hybridity, its capacity for difference and innovation through embodied and embedded experiences.

The Brainship series is the effort of many authors, using McCaffrey's concept of a brainship – a person with disabilities connected to a mechanical ship, which remains unchanged, but co-authors introduce new aspects, adding technological details to align it with contemporary context.<sup>28</sup> Among other additions, *The Ship Who Searched* introduces a synthetic body with a full range of sensations, which finalises the protagonist's romantic experience with tactile sensations, bringing it to sexual fulfilment. However, the novel does not portray it as a polyproprioceptory experience; Tia, the protagonist of the novel, seems to fully submerge into the proxy body sensation, without sensing either her mechanical or rudimentary human body, making the experience closer to a virtual disembodiment than a grounded multi-body experience. This experience of a proxy body reiterates Helva's experience of the Coviki envelope, where her consciousness is completely transferred into a different body, rather than extends to another focal point of perception. However, differing from Tia, Helva never accepts the opportunity of a different embodiment, neither human organic, nor synthetic: she remains firmly satisfied and delighted with her spaceship embodiment in the novel and all the short stories. Thus, while Helva fully inhabits her hybrid body, combining organic and mechanical components, Tia aspires to escape her brainship body, seeing it as limiting, which enhances the transhumanist strand in the series, suggesting that technology is a prosthetic tool to overcome limitation.

In the Imperial Radch Trilogy, the use of ancillaries predetermines polyproprioception as a state of normality for AI sentient spaceships: they perceive their

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<sup>28</sup> For instance, Lackey claims in "Introduction" to *The Ship Who Searched* that McCaffrey "was not a great technologist, nor a great futurist, when it came to techy-bits." (vi) She adds AI spaceships, servos that shell-people can use to manipulate objects both inside and outside their mechanical bodies, as well as changes the "warp drive" of the first novel to "singularity drive."

reality not only through their outside and inside camera and sensors, but also through their ancillaries. *Justice of Toren* recounts its experience of being whole:

I sat, as I had sat for most of my two-thousand-year existence in one system or another, feeling the bitter chill of vacuum outside my hull [...] As I still had ancillaries, I could be in more than one place at a time. I was also on detached duty in the city of Ors, on the planet Shis'urna, under the command of Esk Decade Lieutenant Awn. (Leckie *Justice* 9-10)

The experience of the ship, which still couples a computer and a human, is that of extended cognition, grounded in the experiences of many bodies, existing simultaneously as an assemblage. The Radch spaceships' perception is more-than-human and proves lacking when any structural component of the assemblage is missing. *Mercy of Kalr*, a spaceship without ancillaries, "miss[es] its ancillaries," while Breq always misses what she has lost remaining the only surviving segment of *Justice of Toren*. (Leckie *Justice* 362) The transhumanist premise of extending human's capacity through technology, though, dissipates not only through the idea that the human is enhancing technology, but through the inherent agential presence of the technological other in the canvas of the world-building of the series.

The mindships in the Universe of Xuya series have virtual proxy bodies – avatars, existing due to the omnipresent data feed in their mechanical bodies, on stations and planets of the universe; and the shapes of these virtual bodies is fully their choice, unlike the synthetic imitation of their potential human body in the Brainship Series or random human bodies that are connected to the Radch spaceships as ancillaries. The stream of data allows the virtual bodies to get all sorts of information, including visual, tactile, and olfactory, creating an experience close to a physical presence. They permeate both the virtual overlays and real landscapes, breaching the boundary of the virtual not through the disembodiedness of the experience, but through its interaction with the matter, through affect and sensations,

discussed later in the chapter. The physicality of the virtual experience counters the cyberpunk transhumanist idea of virtuality leaving the physical behind, like Anne Balsamo writes in “The Virtual Body in Cyberspace”: [W]hat is of interest to me in my encounter with virtual reality is the way that the repression of the body is technologically naturalized [...] the body, as a sense apparatus, is nothing more than excess baggage for the cyberspace traveller.” (494) In the Universe of Xuya, the avatars, used by both mindships and humans extending their physical presence and sensations, turn it into a celebration of sensation rather than repression. Mindships’ avatars take many forms, starting from a miniature virtual copy of their real bodies to anthropomorphic figures and even fully human shapes, which, however, still reveal their more-than-human nature. For instance, in *Seven of Infinities*, *The Orchid in the Sunless Woods*’ avatar is:

[A] vaguely humanoid shape [...] but whenever she moved Vãn would catch a glimpse of something far, far larger — sleek and polished metal, the reflection of distant stars, and a feeling the room, the entire habitat were twisting and folding back on themselves, unable to contain the vastness of her. (de Bodard, *Seven of Infinities*)

The virtual, the mechanical, and the human form an intricate union, where the avatar always bears traces of their mindship nature, showing references to the bigger body out in space and to the distortions of the deep spaces travel. The mindship’s consciousness is defined by the constant awareness of the mechanical body out in space, and the avatars, making it a fully polyprorioperceptory experience, like in the Radch spaceships.

The body-to-machine connection becomes a field of exploration of how the embodiment influences cognition through technological means of perception, a site of challenge to the body-mind dichotomy, proving the intricate interconnection and mutual dependence of the parts of dichotomy and the rise of a different nonhuman subjectivity in a human-machine hybrid. The greater mobility of the human component within the combination, as compared to the brain-to-machine connection, implies that the central

position of the human in the combination can be shifted, challenging the anthropocentric hierarchies and prosthetic role of the technology in the combination. The challenge to the anthropocentric hierarchies is supported by the recognition of the human/machine hybrid as a nonhuman entity, a part of a different sentient species. Even though the earliest series, McCaffrey's Brainship series, retains human-centric focus, the later series both refuse to reduce the potential of the hybrid to the human, delving into the potential of assemblages and more-than-human experience.

## 2. Gender

Gender representations in early and "Golden Age" SF have not been particularly diverse, both fervently guarding the boundaries of the gender binary and allocating women highly traditional roles, but even in the 1960s this became a point contested by mainly female authors and served as a platform for a full-scale exploration of gender in later SF, breaking the boundaries and challenging traditional roles. Brooks Landon in *Science Fiction After 1900: From the Steam Man to the Stars* notes: "[W]hen women have figured in early science fiction they have invariably been used to reinforce patriarchal stereotypes." (124) In line with this, the earliest work in this Chapter – Blish's "Solar Plexus" – excludes female characters altogether from the situation of space exploration and the company of scientists and soldiers, while McCaffrey's work sets out to challenge this traditional arrangement by focusing on a female protagonist embodied as a sentient spaceship. Zebrowski's "Starcrossed" quaintly combines the challenge of mixing female and male tissue in the brain of his MOB, but relapses into patriarchal stereotypes as soon as the female and male parts are clearly defined. The gender binaries and boundaries are subject to a profound challenge in the Imperial Radch Trilogy, where the Radchaai language uses only one pronoun for humans and this pronoun is "she." De Bodard approaches gender from a position of non-European culture, questioning European stereotypes and roles and inhabiting her series with mostly female characters. The timeline and gender identification of the authors, thus,

correspond to the general outline of SF development, but the specific features of gender representation in the sentient spaceship hinge on the technological combination of the human and nonhuman in their bodies.

The cyborgian bodies of the human-machine sentient spaceship considered in this chapter either do not have any indicators of a biological sex or include a body with certain primary sex characteristics into a genderless unity of different ontological agents, nevertheless, all of them are gendered in the text, which opens the discussion of the ambiguity and performative nature of gender. With a body where either a human brain or a rudimentary human body is connected to a mechanical body, the gender identification becomes disjointed from the biological characteristics, becomes an issue of choice and performance, even though in most cases human-machine sentient spaceships identify their gender with the sex of the biological body they used to have or are supposed to have, like Bennett in “Solar Plexus,” Helva and Tia in the Brainship series, and mindships in the Universe of Xuya. In “Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory,” Butler discusses gender as performance, its scripted nature, its pre-existence in relation to body and notes: “As a public action and performative act, gender is not a radical choice or project that reflects a merely individual choice, but neither is it imposed or inscribed upon the individual, as some post-structuralist displacements of the subject would contend.” (526) The traditionally inscribed patterns, and individual choices in performing gender are entangled in the human-machine sentient spaceships’ gender identification, with their bodies accentuating the possibility of choice, while social environments set the tone of the gender representation.

These cyborgian bodies also arise as a product of the merger of the human and technology, an unnatural birth, and as a sterile fruit of the technological progress; human-machine sentient spaceships blur the boundary between the born and manufactured, but cannot produce any offspring, disturbing the connection of gender and reproductive

characteristics. Haraway in “A Manifesto for Cyborgs” emphasises the potential of the cyborg to break away from the traditional gender binary, writing: “The cyborg is a creature in a post-gender world; it has no truck with bisexuality, pre-Oedipal symbiosis, unalienated labor, or other seductions to organic wholeness through a final appropriation of all the powers of the parts into a higher unity.” (*Reader* 9) The human-machine sentient spaceships in “Starcrossed” and the Imperial Radch Trilogy attempt to create a non-gendered entity and even a non-binary world in the latter case, even though both works contain binary gender references as well, creating a very different picture of attitudes to gender stereotypes and traditional concept of gender. Contemplating the performative aspect of gender in the cyborgian protagonists and potential for breaking away from the boundaries of binary genders, this section is divided into two subsections, with the first one focusing on the human-machine sentient spaceships, identifying with a certain gender, and the second investigating the protagonists whose baseline is not to identify with gender at all.

## **2.1 Gender Identification Based on Biological Sex**

The human-machine sentient spaceships in this subsection rely in their baseline gender identification on the sex of the human bodies they either used to have or could have if they remained unmodified. Bennett-*Astrid* identifies as man because Murray Bennett had a male body, Helva and Tia base their gender identities on their rudimentary bodies, the gendered characteristics of mindships are interlaced in their body design that takes origin in the biological sex of the modified foetuses. Though this arrangement seems traditional enough, the gap becomes apparent when a closer attention is given to the resulting entities themselves, which can perform any binary gender without fulfilling associated biological characteristics of either. The performative aspect of gender is especially poignant in the characters who have never had a biologically sexed body, like Helva and mindships. Even within the male/female binary the treatment of gender in these works becomes an exploration

of both the characteristics of performances and environments where these performances arise.

“Solar Plexus” introduces an all-male cast of characters of two scientists and a military pilot, following traditional patterns of gendered professional stereotypes, but the picture befitting a Golden Age SF short story is distorted by the hybridity and monstrosity of the human-machine merging in the body of the sentient spaceship, the pronouns to describe the hybrid changing, depending on the presence of the human connected to it.<sup>29</sup> The destabilization affects both versions of the short story, but they treat it differently, revealing how the unease associated with breaking the ontological boundary of the human/nonhuman bleeds into other dichotomic distinctions. The ship Bennett connects himself to has a female name – *Astrid*, amplifying the traditional association of ships with the feminine pronoun, but the 1941 version never uses it. Kittinger, the protagonist, abducted by Bennett-*Astrid* from his space observation laboratory, uses a neutral pronoun for the unknown spacecraft and shifts to the masculine pronoun, recognising the hybrid as Bennett. Bennett’s disconnection from the spaceship seems to entail *Astrid’s* disappearance, a finite death of the entity. The 1952 version of the short story complicates the gender labelling: the unknown spacecraft is referred to as “it,” the Bennett-*Astrid* has masculine pronouns, while the *Astrid*, disconnected from Bennett becomes a “she.” (Blish *Human* 203, 208, 215) The femininity passing unrecognised in the ship’s original name in the first version suddenly emerges in the place of the defeated human-machine hybrid through Powell, a military pilot and another prisoner of Bennett-*Astrid*, in the second version. The feminine pronoun replacing the neutral of the technological other in the 1952 version not only reinforces the banishment of the monstrosity, but it also emphasises that the ship continues to exist without the human element

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<sup>29</sup> Brian Attebery in *Decoding Gender in Science Fiction* writes: “Until the 1960s, gender was one of the elements most often transcribed unthinkingly into SF’s hypothetical worlds. [...] The conservatism of a primarily male audience and the editors, publishers, and distributors who were trying to outguess that audience-kept gender exploration to a minimum. (5) Both versions of “Solar Plexus” were written before the 1960s and did not intend to explore gender roles, with default masculinity imposed on all characters.

aberrating the “natural order.” The distortion of default masculinity arising through the appearance and destruction of the human-machine hybrid is an uncanny reminder of the ontological boundaries broken, and an urge to restore the order and reaffirm the solidity of the dichotomic categories.

The disconnection of Bennett from *Astrid* is a symbolic gesture, reinforcing the norm, policing the dichotomic boundaries and refusing the technological other the agency to claim a gender. Unsurprisingly, it is Kittinger and Powell, both coded as a “white straight male speaking standard language,” as Braidotti describes the Humanist ideal, who restore the “natural order,” by dividing the human from the technological other. (*Posthuman* 65) The agential presence of the human-machine hybrid is erased, and the technological other – *Astrid* – gets a traditional gender label from one of the victorious men, by which he seemingly claims ownership over the ship. Their victory over the monstrous antagonist is a victory of the liberal Humanist subject resisting the seductions of technological enhancement and remaining untainted by blurred boundaries of traditional dichotomies.

*The Ship Who Sang*, published as a fixup novel in 1969, attempts to imagine a gender-equal future where women have access to jobs and are not forced into expected scenarios by the reproductive capacity of their bodies, like many other works by female authors of the time; however, the rest of the Brainship series does not retain the same momentum. In *The Feminine Mystique* (1963), Betty Friedan criticizes the social perception of and attitudes to woman in the 1950s-1960s US, writing:

The image of the woman from this [...] magazine is young and frivolous, almost childlike; fluffy and feminine; passive; gaily content in a world of bedroom and kitchen, sex, babies, and home. The magazine does not leave out sex; the only passion, the only pursuit is permitted is the pursuit of a man. (36)

Helva is certainly young, frivolous, and keenly interested in romance, but she hardly fits into the rest of the expectations. She successfully carries out essential courier jobs for Central



Worlds Medical, which allows her to repay her debt to Central Worlds expediently and make upgrades on her ship body. Her embodiment makes sexual intercourse difficult and childbirth – purely impossible, but Helva does not consider it a personal tragedy, countering the vision of childbirth as her ultimate “fulfilment.”<sup>30</sup> (Friedan 62) On her “Assignment Stork” with a temporary female brawn – Kira, Helva expresses her lack of desire to nurse children and is happy to transport embryos in special equipment rather than actual infants. (McCaffrey *The Ship Who Sang* 55) Even though romance is crucial for the plot development, it does not become the main plot, finding space for other relations, including companionship among women: Kira and Theoda, a physiotherapist, become Helva’s friends during the missions they carry out together. Further distancing Helva from traditional femininity is her metaphorical divorce with Teron due to whose incompetence she becomes a drug-runners’ prisoner. With access to professional engagement, absent expectations of compulsory marriage and childbirth, the future the novel portrays is hopeful enough, but remains within the heteronormative paradigm, and eventually distils to finding the one true love.

The human-machine combination harbours a greater potential to challenge the existing order than the series cares to develop; while the first novel ventures to question some social expectations, *The Ship Who Searched* written in the 1990s gives a pointedly conservative impression, leaving the field of gender true to the first novel. Feminist critics, like Jane Donawerth, are unconvinced even by progressive aspirations of the first novel. In *Frankenstein’s Daughters: Women Writing Science Fiction*, Donawerth analyses Helva’s relations with her male brawns as a lost opportunity to question patriarchal norms, comparing them to marriage in the mid-twentieth century US, both in their heteronormativity and the place they allocate to women. (64-65) She also points out the dehumanising and objectifying implications, arising out of the combination of a woman and machinic body, as both are associated with servitude and lack of agency. (63) Though Helva’s relations with

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<sup>30</sup> Sexuality in the Brainship series is considered in detail in the next subsection.

men indeed heavily rely on traditional patterns and Helva reveals her most traditionally feminine features in these relations, she is quite firm in exercising her right of choice to end toxic relations with an unpleasant brawn and is not responsible for any household work. In contrast, Tia cleans after her brawn, which she can do much better with the newly added servos, which makes the 1992 novel look far more traditionalist than the 1969 one.

Helva's cyborgian embodiment accentuates the gap between the biochemistry of the human body and gender identification; Helva performs as a female, which, though associated with the biological sex of her organic body, is not grounded in her actual hybrid embodiment lacking biological sex characteristics. Gender and embodiment in the cyborg body form an entanglement that fascinates many critics. Haraway praises *The Ship Who Sang* for delving into the exploration of cyborgian embodiment, noting in "A Manifesto for Cyborgs": "Gender, sexuality, embodiment, skill: all were reconstituted in the story". (*Reader* 36) Balsamo joins the praise in "Reading Cyborgs, Writing Feminism", highlighting the potential of Helva's cyborg embodiment to "emancipate woman from her corporeal body." (149) Yaeri Kim, mindful of feminist critics responses to the novel, admits the presence of gendered patterns, but foregrounds the disconnection of Helva's gender from her biological characteristics, seeing it as a testimony to "instability and mutability of [gender] norms, in particular with regards to technology." (46, 56) As noted before, Helva follows more traditionally feminine patterns when interacting with men, and in an interesting parallel, McCaffrey compares her first interaction with unmodified men to a theatre performance: "No actress on her opening night could have been more apprehensive, fearful or breathless. Unlike the actress, she could throw no hysterics, china objects d'art or grease-paint to relieve her tension." (McCaffrey *The Ship Who Sang* 9) At this "welcome reception," Helva performs a woman and a host, and sings with her exceptional voice, actualising the performative aspect of gender in more than one way. While the welcome reception follows traditional gender patterns, Helva's usual behaviour often challenges the expected patterns

by her rapid decision-making, her confidence in her actions, and ability to take care of herself.

De Bodard, writing *gender in the Universe of Xuya*, does not attempt to imagine a bold future, like McCaffrey in *The Ship Who Sang*, rather relying on traditional patterns of Chinese, Mexican, and Vietnamese cultures, and the resulting gender landscape has little in common with Western conservative samples, like “Solar Plexus.” The series combines space opera conventions with an alternative history premise, where China reaches Americas earlier than Europeans, defining China and Mexica as locales for earlier instalments. Later instalments shift to Dai Viet Empire – a space empire taking its cultural origin in Dynastic Vietnam, which has remained the focus of the series since 2012. Dai Viet Empire draws upon the fifteenth-century Vietnam, free from both Chinese and European colonisation and giving substantial economic and political freedom to women. Even under the influence of Confucianism imposed by Chinese colonisers, women retained certain economic independence and social weight.<sup>31</sup> Hy V. Luong, an anthropologist, working on kinship systems and gender relations in Vietnam, writes: “Vietnamese women have historically maintained a high visibility beyond the domestic domain through their fundamental role in the Vietnamese economy and in generating household incomes through commerce, handicraft production, and agriculture.” (“Gender Relations in Vietnam” 26) Women’s prominence in Vietnamese history – compared both to neighbouring countries and the Western world – guides de Bodard’s focus on female characters and their diverse professions and social statuses. The cast of the series is predominantly female – with all the main mindship characters identifying as women, a contrast both to the male-dominated “Solar Plexus” and an attempt at equality in *The Ship Who Sang*. The variety of relations mindships can form with each other and humans, including family relations, friendships, professional ties, and sapphic romances, indicates both women’s freedom and agency in the series, and

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<sup>31</sup> Chinese colonization of and influence on Vietnam goes back to the 1<sup>st</sup> century AD.

mindships' agential participation through their deep inclusion in Dai Viet Empire's social life.

Mindships' gender identification follows the pattern of "Solar Plexus" and the Brainship series, associating the rudimentary human's body biological sex with the spaceship's gender, but unlike the bodies of Bennett-*Astrid* or brainships, the biological sex of a modified foetus is reflected in the individual custom-made design of each mindship's body, impacting structure and materials. At the same time, the applicability of the category of gender to the hybrid body is not a given. For instance, in "The Shipmaker" the Grand Master of Design Harmony, a Vietnamese ex-pat working in the Chinese empire, corrects herself while referring to the mindship child to be born and connected to the designed body as "he": "He – no, it – it was a machine, a sophisticated intelligence, an assembly of flesh and metal and Heaven knew what else." (De Bodard "The Shipmaker") Her refusal to gender the child is indicative of a boundary drawn between the human and the hybrid, and of a hierarchical implication of human's entitlement to gender, while the other is objectified by the neutral pronoun. Contrastingly, Dai Viet's mindships are included into families, and, consequently, learn gendered behaviours; they assimilate gendered performance through their connection with other social agents, and perform their gender in accordance with their cultural code, combined with filial respect and social hierarchies. The mindships' gendered performance, reflecting the intricate connection of the organic and mechanical parts of the spaceships' bodies, is thus a claim to social recognition of equal agency and rights of humans and mindships, without erasing the nonhuman nature of the hybrid, and its acceptance on the part of other participants of the social process.

The category of gender in the human-machine sentient spaceship serves as important evidence of humanness and agency, he/she pronouns serving as a factor of inclusion of the other into a human-exclusive category. At the same time, when the locus of change in the pronouns is an agent different than the other to whom these pronouns relate to, it accentuates

the hierarchical structures privileging the human and sustaining the erasure of the other's agentiality, imposing gender or lack whereof. Consequently, gender self-identification and social acceptance of a human-machine sentient spaceship as a gendered entity are crucial for their position as agents in their social environment. The disconnection between biological sex and gender is emphasised through a hybrid body possessing few or no biological sex characteristics, however, the above examples do little to challenge the gender binary itself, sticking to male and female characters, and expressing exclusionist views on the hybrids with the use of "it."

## **2.2 Beyond the Gender Binary**

Works where the source human material is taken from differently sexed bodies, or the locus of identity lies in the technological other offer a deeper exploration of the fuzziness of gender binary. In "Starcrossed," Zebrowski introduces the MOB as a genderless entity, which obtains gendered characteristics only through a malfunction, and further complicates gendering by imagining a composite brain containing tissues from both male and female sources. Leckie's Radch is a post-gender society, where gendered markers are mostly placed by the non-Radchaai, which makes the instances of indirect gendering and gendered vocabulary important signs of power dynamics in the plot. The technological others in the Imperial Radch Trilogy are generally referred to as "it," implying their nonhumanness and subjugated, non-agential position; the human bodies used as ancillaries become a part of AI spaceships and the use of pronoun is transferred onto them, deepening the objectifying practices applied to the colonized populations.

"Starcrossed" boldly attempts to look beyond gender, but fails miserably, relapsing into the binary gender paradigm and resorting to limited gender stereotypes: the MOB is a non-gendered entity, where the male and the female are equally present as a healthy default, but a split into a male and a female parts causes its downfall, with the dangerous and dysfunctional woman corrupting the innocent man. Zebrowski's MOB as a properly

functioning entity does not use any pronouns, but as soon as the MOB is awakened by the approach to the destination and finds a part missing, “he” emerges to refer to the focal character; when the missing part re-enters communication, it identifies as a woman. (Zebrowski 238-239) The MOB is a composite nonhuman entity, a Harawayan cyborg of the “post-gender world,” while the use of gendered pronouns signifies the return of humanness, which becomes a weakness in the absence of other human characters and the undamaged MOB as a baseline. In a manner reminiscent of Golden Age SF dynamics, the male part of the brain becomes a focal point, his innocence unable to resist the temptation of virtual sex with a desire-driven and slightly demonic female seductress bringing about the MOB’s destruction.

The traditionalist stereotypes, which seem to arise only in malfunction, are, however, present in the design and choice of materials of the MOB from the very start, evident in the functions allocated to the parts taken from the male and female brains. The male part of the MOB possesses the knowledge of “everything in the ship memory banks” and feels “secure in its purpose,” staying dormant during the interstellar flight and waiting for the mission to start. (Zebrowski, 239, 238) The “simple” female part of the brain has “a fragmented human past and certain intuitive skills,” it stays engaged during the whole journey, “operating the routine component of the interstellar probe.” (238-239) Anatomically, the task division is sustained through the “evolutionary structure of old brain, new brain and automatic functions,” where the old brain parts are taken from a woman and new brain – from man. (239) The female part’s responsibility for daily servicing tasks, and a more complicated and demanding job for the male part is a traditionalist layout of gendered stereotypes, subjugating and exploiting woman, even when she is present only as a portion of brain tissue. As the probe’s destruction is a direct result of the split in the integrated identity, “Starcrossed” could be seen as a subtle critique of patriarchal and hierarchical systems, perpetuated in the design of the human-machine hybrid. But the description of a sexually-

starved woman recklessly demanding sex at the worst possible time – when the probe’s physical existence is endangered – bears a bit too much gusto, undermining the potential challenge to the existing gender dynamics.

The Imperial Radch Trilogy manages to create a post-gender civilization, with most characters remaining ungendered with “she” as a default pronoun for all humans, estranging and showing it as a time-conditioned, social gender. In the Radch, gender is disentangled from reproduction through the accessibility of advanced reproductive technologies, and behaviour of the Radchaaï combines performances of different genders regardless of their biological characteristics:

I saw them all, suddenly, for just a moment, through non-Radchaaï eyes, an eddying crowd of unnervingly ambiguously gendered people. [...] A profusion of colours that would have been gender-marked in other places. All of this matched randomly with bodies curving at breast and hip or not, bodies that one moment moved in ways various non-Radchaaï would call feminine, the next moment masculine.” (Leckie *Justice* 283)

Radchaaï characters who do not interact with the non-Radchaaï remain ungendered throughout the trilogy, making obvious the transience of the grasp of gender stereotypes and the ease of shifting them through a different cultural paradigm. Only few characters in the series, including Breq, Seivarden, and Lord of the Radch are indirectly gendered by non-Radchaaï characters, and their gendering in the otherwise gender-ambiguous environment becomes a meaningful testimony to power dynamics rather than defines their behaviour or gendered social norms. Both the Lord of the Radch and Seivarden, a former officer of *Justice of Toren*, a haughty aristocrat from a powerful family who lost all his influence after going missing for a century and became a drug addict, are seen as male by non-Radchaaï, connecting oppressive imperial systems and masculinity. This association is sustained by the gendered elements of the Radchaaï language: the default feminine pronoun contrasts with

masculine elements, like “Sir” as an address to a higher-ranking officer in the Radchaai military, but most importantly, “Lord,” used both for Mianaai and heads of the “houses,” extended Radchaai families. (Leckie *Justice* 130) Breq, on the other hand, is gendered as a female; and with her rebellion against Mianaai and his empire, femininity becomes a subversive factor questioning the violent colonial order perpetuated in the Radch empire. Thus, gendering in the post-gender imagination becomes a reflection on the systemic bias, power, and oppressive systems rather than an assignment of expected gender performances.

The Radch civilization, ignoring the female/male dichotomy, however, keenly observes and polices the animate/inanimate dichotomy expressed through the use of “she” and “it” respectively; ancillaries, AI spaceships, and space stations are included into the inanimate and suffer corresponding limitations in rights and freedoms, ultimately being perceived as mere tools, which the trilogy challenges by Breq’s rebellion against Mianaai and her claim for recognition of AIs as a “Significant” species and protection from the Radch on this basis. Breq’s own journey to overcoming both her conditioning and the trauma of almost complete destruction and loss of most of herself causes a shift in the use of pronouns, happening in the first novel and finalised by Breq’s recognition of the shift in pronouns in *Ancillary Mercy*. The narrative in *Ancillary Justice* is split into two spatio-temporal strands: Shis’urna, the last annexation, where *Justice of Toren* is destroyed, and Nilt, where Breq finds the Presger weapon invisible to the Radch detection systems, which allows her to make a statement of killing one of Mianaai’s bodies. On Shis’urna, *Justice of Toren*, One Esk and all ancillaries are referred to as “it,” while people on Nilt and later Radchaai, ignorant of her being an ancillary, refer to Breq as “she.” The change in pronouns corresponds to the internal shift in Breq who slowly overcomes her conditioning to follow orders and becomes a free agent. In *Ancillary Mercy*, Breq’s human crew learns that she is an ancillary but continues to use “she”:



I suppose I've gotten used to being called by whatever pronoun seems appropriate to the speaker. I have to admit, I'd take offense if one of my crew called me *it*. But mostly because I know they'd think of it as an insult. (Leckie *Mercy* 206, emphasis Leckie's)

The use of pronoun reflects not only a habit, but also the crew's acceptance of Breq as a person, as equal to human, rather than a "piece of equipment." The use of pronouns reveals deeper structures of both oppression and empowerment, indicative of the shift in humans' attitudes towards the other, as well as the other's recognition of their agential potential and capacity to challenge their own subjugation by the Lord of the Radch.

Gendering in the human-machine sentient spaceships indirectly answers the question whether they are human enough, and what gender means for a hybrid entity who either does not have biological sex or mainly lacks its characteristics. Zebrowski sees gender as an utterly human category, tenacious to the point of arising out of human brain tissue even when the rest of the body of the donor is absent, but destructive to the cyborg, whose gender awakening equals death. Leckie questions gender as a set of expected behaviours, showing the conditional and coincidental nature of gender performances. In the post-gender Radch, gendering is a subtle portrayal of power dynamics, and a way to reveal systemic biases inlaid in gender categories. The gender of the human-machine sentient spaceships exposes its performative nature and the socially conditioned expectations of gender performances; it also reveals systemic patterns of oppression working through gendering and lack thereof in the European and non-European cultural codes.

### **3. Sexuality**

The cyborg's body destabilises the gender binary emphasising its social and cultural nature, the ripple effect of this destabilization spreading to the cyborg's sexuality; the hybrid bodies of human-machine sentient spaceships, a product of manufacturing process as a cybernetic whole, though encompassing organic human parts, are necessarily infertile, and

come in shapes particularly resistant to traditional sexual experiences. Consequently, human-machine sentient spaceships' sexual life is a site of inventiveness, employing different types of proxy bodies, including alien, robotic, and virtual bodies, imagined embodiments, and a site of discomfort questioning the possibility of the physical sexual act in a body possessing this type of hybridity. All the works considered in the Chapter, except for "Solar Plexus," discuss the cyborg's sexual life, either reinstating the heterosexual norm through their liminal bodies or probing the diverse ground of non-heteronormative potentials. This section, however, does not set heterosexual and queer sexual experiences as an axis of contrast; it chooses to group the analysed works by their vision of the baseline of the cyborg's behaviour as sexual or asexual.

The cyborg's expression of sexual desire in its diversity treads the liminal spaces formed by blurring the traditional dichotomies of the human/nonhuman, born/manufactured, nature/culture, and, regardless of the heterosexuality or queerness of the experience, exposes the difference in their bodies, experiences, and subjectivities. Hayles, discussing the cyborg's subjectivity and its development in "The Life Cycle of Cyborgs: Writing the Posthuman," defines "three phases of the life cycle," including "adolescence," "sexual maturity," and the "reproductive and generative phase," paralleling the cyborgian experiences with the human, but accentuating the posthuman nature of the cyborg. (159) Hayles sees sexuality as an essential part in a stage of development that inevitably occurs in the cyborg's life cycle and is definitive for the alternative subjectivity arising in the hybrid body. The choices made in describing the cyborg's sexual desire are reflective of how the difference and liminality are handled, with heterosexual experiences often subduing the ambiguity and emphasising similarity, while queer experiences embrace the porosity of boundaries and difference.

The cyborg's asexuality celebrates the freedom from the human reproduction paradigm, excluding the cyborg from the chain of organic births and deaths, and from humanness and accentuating the posthuman in the cyborg. In "A Manifesto for Cyborgs,"

Haraway contemplates the cyborg's "uncoupl[ing] from organic reproduction," and delves into the implications of cyborg sex: "Cyborg "sex" restores some of the lovely replicative baroque of ferns and invertebrates (such nice organic prophylactics against heterosexism)." (*Reader 8*) Haraway delights in the promise of the cyborgian body with its potential for both asexuality and auto-eroticism, for diversity of possible connections with other species and matter through the exclusion from the "Oedipal project." (9) The analysis of the diversity of human-machine sentient spaceships' sexual experiences in proxy bodies relies on Hayles' theoretical account; while Haraway's approach defines the basis for the consideration of the human-machine sentient spaceships who generally behave asexually.

### **3.1 Sexual Experiences of the Human-Machine Sentient Spaceships**

The Brainship series and the Universe of Xuya see the human-machine sentient spaceship as sexually active beings; the former grounds it in the inherent humanness of the hybrid entity, while the latter handles sexuality as a category that is not limited either to humans or organic beings. Even though their bodies are endowed with the capacity for desire, their design does not easily provide for sexual contacts: their rudimentary bodies are immobile and rather vulnerable, leading to the transfer of most of their sexual activity to proxy bodies of different sorts. While brainships' and mindships' embodiments are similar, the design difference is significant enough to make their sexual experiences disparate. Brainships' rudimentary human bodies are fully encased in a titanium column, which can be opened only for maintenance with a release code; the extraction of the body from the column can cause serious trauma or death of the shell-person. This combined with the lack of tactile sensation necessitates the use of a proxy body. In contrast, mindships' rudimentary human bodies, situated in the heartroom, are inseparable from the ship, but have sensation and can interact with other agents. All parts of mindships' bodies – organic, virtual, mechanical – can participate in a sexual act, bringing the organic and inorganic together in a posthuman entanglement. Their difference also comes across in their sexuality of choice: while the

Brainship series functions within the heterosexual paradigm, the Universe of Xuya series explores queer sapphic experiences.

Both protagonists of the Brainship series, considered here, are heterosexual women, and their romantic engagements constitute an important part of the plot; however, their attitudes to their embodiment do not coincide, posing sex as an easy step for Tia, and an almost impossible fit for Helva. Hayles contends that Helva “moves through a typical if vicarious female life cycle despite her cyborg hyperconnectivity, including love, marriage, divorce, and motherhood,” “even though [her] body has been subjected to massive technological and chemical intervention.” (“The Life Cycle of Cyborgs” 168) While Helva is motivated by forming a romantic connection with men becoming her brawns, which indeed makes the novel a “cybernetic romance,” as Hayles describes it, motherhood is a strange addition in relation to Helva, who neither wants nor can be a mother. Moreover, Helva’s romantic relations progress not as smoothly as Hayles’ description implies; Helva’s “negotiating of issues of intimacy and shared space” faces a dead end through both her attachment to her embodiment and trauma acquired in the time of being separated from it. (159) Hayles’ account is more applicable to Tia in *The Ship Who Searched*, whose relations with her male brawn and love interest advance throughout the novel and are logically finalised by sex with a proxy body. Helva’s loyalty to her initial embodiment can be attributed to her conditioning, to which she has been subject since childhood, but it is also indicative of the awareness of the difference and reluctance to erase it by another transhuman trick, overcoming the limitations of her current embodiment.

Helva’s and Tia’s sexual experiences convey the difference in their attitudes to their embodiments, and indicate an ideological shift in the series, where transhumanist reverie of boundless enhancement strangles all the streaks of a posthuman exploration of human-machine entanglement. Helva’s reluctance and direct rejection of available proxy bodies throughout the novel and consequent stories makes the Corviki envelope the only proxy she

uses. On her second mission to Beta Corvi, both Helva and Niall, her brawn and partner, who is passionately in love with her, wear the Corviki envelope. The Corviki helpfully push them together seeing their attraction and causing a conflation arising out of “unusually rich emanations” of “the energies which they yearned to combine.” (McCaffrey *Unicorn* 295) Helva does not like the Corviki envelope, as described in the first section of the chapter; she neither initiates, nor gives her consent to this conflation; moreover, she fears for the integrity of her personality, coming in the wake of using a different embodiment and perception, and attempts to withdraw. This, combined with Niall’s response: “Don’t play the professional virgin with me now, Helva!” not only emphasise sexual connotations, but also not so subtle undertones of rape. (McCaffrey *Unicorn* 298) Sex for Helva is a traumatic experience, after which she is glad to remain herself, which resists toxic heterosexual stereotypes of women being subdued through sex. Unlike Helva, Tia takes it upon herself to procure the proxy body, financing the research into transmitting sensual input to her brain. She eagerly presents her new proxy body to her partner, with the only regret that it is too heavy to be carried princess-style into the ship. This promise of sex is blessedly unmarred by violence but is indicative of the many ways the heterosexual paradigm shapes woman’s perception of herself, her embodiment, and her readiness to change to fit her partner’s expectation. With the last obstacle to physical intimacy thus erased by a technological fix, *The Ship Who Searched* has a far greater potential for normalising both heterosexual paradigm and inherent humanness of the hybrid.

De Bodard dwells on romantic relations of mindships and humans, representatives of different species for all intents and purposes, their union harbouring no hope for producing an offspring, but still forming a lasting and familial bond. These familial connections, however, do not replicate the Western pattern of nuclear family, but become a part of an extended hierarchical system of seniority and different levels of intimacy, typical of Vietnamese families. The patterns of familial relations in Vietnamese culture are crucial for

modelling other social interactions, so the addresses, like “big sis,” “little sis,” “elder aunt,” used for people in romantic relations, do not necessarily indicate a genealogical relation, but testify to social hierarchical patterns and indicate intimacy of the partners.<sup>32</sup> Relations between humans and mindships become both a posthuman interspecies kinship and a perpetuation of traditional Vietnamese familial and social structures, both of which resist reduction to Western patterns. In “The Waiting Stars,” *The Turtle’s Citadel*, a mindship captured by the Galactics and made to live in the human body called “Catherine,” struggles with fitting into the Western nuclear family and misses the place of belonging, of “fitting in, being able to stare at the stars without wondering which was their home--without dreaming of when they might go back to their families.” (De Bodard 9) Without memories of who she is, she marries a human man, but their life together remains lacking in a way Catherine cannot comprehend until her ship body is rescued by her Dai Viet family. Memories unlocked, *The Turtle Citadel* does not hesitate to abandon her life with the Galactics and return to Dai Viet, resisting the colonial oppression she is subjected with her identity and body taken from her.

The Universe of Xuya series features heterosexual, lesbian, and asexual characters, and most romantic plotlines involving both mindship-human and fully human couples, are sapphic, bringing forth the queerness always already present in the sentient spaceships. The hybrid body, exposing the porosity of numerous dichotomic boundaries, inhabits a queer space, where gender and sexuality arise out of a convergence of ontologically different agents, questioning stereotypes and social expectations, whether the authors choose to explore it or not. The physical act of sex between a human and a mindship in *Seven of Infinities*, engages the whole body of the ship, including the avatar, mechanical parts, and

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<sup>32</sup> In *Discursive Practices and Linguistic Meanings: The Vietnamese System of Person Reference*, Hy V. Loung notes that Confucianism and native Vietnamese ideology both attribute the language with a function of “reproduction of sociopolitical order,” so the use of kin terms perpetuates social expectations in the interpersonal interactions. (39)

hidden rudimentary human body in the sensual experience, queering the space and matter.<sup>33</sup>

The complementary relations between mechanical, virtual, and organic in the expression of mindships' materiality mark a shift in the treatment of matter, which is recognised as a part of an agential vibrant assemblage. Bennett describes assemblages as unique entities where "objects appeared as things, that is, as vivid entities not entirely reducible to the context in which (human) subjects set them, never entirely exhaustible by their semiotics." (5, emphasis original) In the assemblage of the mindship, the "oily sheen" indicating the presence of mind in the ship, turns the effect observed in a non-living matter into a sign of life, mirroring the mindship's heartbeat: "Now that her own heartbeat had slowed down she could hear the faint sound — the steady beat that drew faint, translucent patterns on the walls, that oily sheen that seemed to tremble on everything." (De Bodard *Seven of Infinities*) Sexual experience becomes an ultimate expression of the vibrancy inherent in the non-living matter, activated by the hybrid embodiment of the mindship, as well as a reflection of the complexity of an assemblage, encompassing multiple agents. The Universe of Xuya makes the sex a way to reassert the complex unity of the mind and body, information and materiality, nature and culture in a mindship, and explore the bodily nature of affect, which is discussed in the next section of the chapter.

The heterosexuality of the protagonists in the Brainship series acts as a means of normalisation of the cyborgian experience, an attempt to boil it down to the human experience, reiterating the sentient spaceship's claim to humanity. Though *The Ship Who Sang* follows the heteronormative paradigm, Helva's relations with her embodiment make her heterosexuality a more liminal phenomenon, resisting easy classification. *The Ship Who Searched* is much more invested into equating the brainship with humans, and expression of

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<sup>33</sup> *Seven of Infinities* (2020) does not show the participation of the rudimentary human body, as the intercourse takes place in living quarters, however, its capacity for being as active a participant is depicted in *Red Scholar's Wake* (2022), where lovers have sex in the heartroom. Due to the time of publishing, this scene cannot be used for the analysis.

Tia's sexuality becomes just another tool for it. In contrast to it, the Universe of Xuya pursues neither the pacifying attempt of portraying mindships as humans, nor the traditional comfort of heterosexuality. The Universe of Xuya opts for portraying queer bodies in sapphic interspecies relations, where the entirety of a mindship is an active participant, rejecting the normalising depiction of the proxy body as a receptacle of sexual desire. While the underlying idea of the Brainship series is to prove a shared human experience, regardless of the embodiment, the Universe of Xuya traces difference in the expression of intimacy through hybrid bodies of human-machine sentient spaceship.

### **3.2 Asexuality as a Norm for the Human-Machine Combination of the Sentient**

#### **Spaceship**

Both Zebrowski and Leckie present asexuality as a default for their sentient spaceships, as opposed to sexual behaviour of humans, however, they disagree on how the presence of human organic tissue affects the whole human-machine entity. Zebrowski insists that the human element inevitably reverts to its human ways, including sexual behaviour, presenting a danger to the cyborg's existence. In "Starcrossed," cyborg sex, a virtual autoerotic action, functions as another proof of the impossibility of a successful human-machine connection. Leckie's Radch spaceships function successfully for centuries, with sexual desires of the human bodies satisfied by themselves. The action is material, located in the human bodies constituting a part of the spaceship, and autoerotic, even when different human bodies participate in it together, the AI is what drives each of these bodies to action. Even though AI spaceships are de facto participants of any such intercourse, they do not experience sexual arousal, however, they do feel the need for non-sexual intimacy that arises from close cohabitation of many human bodies in the living quarters of the ship.

In "Starcrossed", the MOB's sexual experience is a journey inward, a relapse to humanness, which interrupts the operational flow of the probe and results in its destruction. The malfunction triggered by the transition from a half-dormant to a fully active state of the



composite brain results in the divide between the two parts – male and female, hindering the proper assessment of the progress of the probe. The female part engulfed by the memories of her previous life and embodiment brims with sexual desire and sends voluptuous images to the male part. Yearning for connection through sex, she is both a temptress, and a guide, explaining to the artificially grown male part his masculinity: “You would have been a man [...] if they had not taken your brain even before birth and sectioned it for use in this ... hulk.” (241) The female is portrayed as a more ancient, basic, and primal part of the human self, with a connection to nature used to invoke sexual instincts in the male, accentuated by erotically loaded linguistic framing of her description, including images of “slippery warmth” and “softness.” (239) The female part overtly controls the sexual experience, “feeding in many more hallucinogens than were necessary to bring him to complete consciousness,” constructing a virtual experience with imagined bodies. (239) The male part is initially portrayed as mechanical, rational, indifferent, trying to re-connect and continue the mission, puzzling over the re-integration of the disruptive element “running wild” and aware of the danger. (239) The male part is also conspicuously referred as the MOB, othering the female component, making it more of an outside influence rather than the lost and regained part.

“The integrated self” of the MOB is ageless and immortal; divided, the male part experiences a metaphorical birth, sexual maturity, and death, following the life cycle of the cyborg, described by Hayles. While the female part has her previous experience to rely on, and comes to the logical conclusion of death, the male part, produced artificially, goes through the full cycle. He is born after being “[plunged] into a womblike ecstasy,” his adolescence comes with the invention of the virtual body by the female part. (239) His mating phase is heralded by a hallucinogen-induced sex and skipping the reproduction part, he dies after the orgasm. The sexual experience, usually impossible for the MOB, happens when a concerted effort of the composite brain is required to navigate the transition to the

atmosphere, but distracted by the fantasy, the MOB is unable to adjust the speed, of the approach to the star, which turns 'la petite mort' into a finite destruction, a punishment for the humanness in the nonhuman body.

Radch spaceships without ancillaries possess no libidinal urges, and all the sexual desire, arising out of the organic human bodies connected to the AI, is perceived as a part of tending to an organic part of the body, and resolved with the help of other ancillary bodies, in an autoerotic and hardly sexual action. Eleanor Gold in "Mindclones, Ancillaries, and Cyborgs: Technologies of the Split Self in Transhumanism and Other Science Fictions" contemplates this process and describes it as "something more akin to husbandry." (151) While this reasserts the central position of the AI and reinstates the hierarchical relations, between the machine and the human in the combination, it also reflects the mutual influence of the parts, emphasizing the ship's awareness of the whole assemblage and the need for human bodies to feel physical and psychological comfort, a sense of belonging. Being the only surviving segment of *Justice of Toren*, Breq experience the lack, unable to be "surrounded by [her]self," and this lack cannot be remedied by humans or *Mercy of Kalr*, even after its ancillary implants are reactivated. (Leckie *Justice* 138) This need, however, is not sexual in nature, as *Mercy of Kalr* observes: "By now pretty much all of Kalr has figured out that any of them could be in bed with you all day and all night and it would never be the least bit sexual." (Leckie *Mercy* 150) The need for an affectionate touch and physical connection comes from the human bodies, but obtains a different sense for the AI, and becomes a desire for non-sexual intimacy, reflecting the mutual impact of the parts of the assemblage.

At the same time, the Radch spaceships are capable of love, but this love does not encompass a sexual dimension, constructing their relations with independent humans in their crew, influencing their goals and behaviours. For instance, One Esk's affection for Lieutenant Awn, its favourite, resembles an attitude of a mother to a child: it needs to keep

her in sight, and provides for her comfort, both physical and emotional. Following Mianaai's order, *Justice of Toren* kills Awn, and the guilt burdening One Esk Nineteen serves as a driving force for the new identity formation, and Breq's quest to both avenge her death, expose Mianaai's split, and help Awn's sister. The last point drives Breq to accept her appointment as Fleet Captain, after the first two points are fulfilled. Appreciating the power of this love, Lieutenant Skaaiat, Awn's lover, notes: "You're the ancillary, the non-person, the piece of equipment, but to compare our actions, you loved her more than I ever did" (Leckie *Justice* 370). The combination of this non-sexual love towards humans, as well as the need for non-sexual intimacy reaffirms the asexuality of the Radch sentient spaceships, fiercely protective of their favourite humans, but also terribly wronged when sex is imposed on their ancillaries by ruthless independent humans, like Seivarden in his youth.

The opposition between "Starcrossed" and the Imperial Radch Trilogy can be distilled to the opposition of anthropocentric and non-anthropocentric perception of the human-machine hybrid. While Zebrowski sentences his MOB to death from being too human, he still privileges the "natural expression of humanity" over the lacking artificial indifference. Leckie's AI spaceships recognize the differing needs of the organic human bodies, prepared to co-exist with them in an assemblage and preferring this type of existence. The Radch ships sustain the hierarchical premise, just displace the human from the seat of power, the ethical issue of which is being resolved throughout the trilogy and is discussed in Chapter Five. The sexuality or asexuality of the sentient spaceship germinates on the same soil of the exploration of humanness and agency as gender; the initial implication of asexuality is lack of humanness and, consequently, agency, while the sexual drive reinstates the sentient spaceship as equal to the human. The Universe of Xuya and the Radch Imperial Trilogy challenge normative heterosexuality, the association of sexuality with the norm and humanness, as well as the attribution of sexuality solely to the living matter, creating a diverse landscape of queer sexual experiences in the hybrid bodies.

#### 4. Emotional Experiences

Feelings and emotions in the human-machine sentient spaceship's body infallibly draw attention to the exploration of humanness. Often reduced to a factor proving the humanness of the hybrid, emotionality, however, can also serve to challenge anthropocentricity when experienced by pointedly nonhuman entities. The subsections follow the clear contrast between these positions: the first subsection groups together works where the human element is the source of emotions, the second – dwells on designs where the central element is nonhuman or not fully human. Blish's "Solar Plexus," McCaffrey's Brainship Series, and Zebrowski's "Starcrossed" connect emotions with the human nature, casting computer or AI as emotionless and incapable of feelings. The protagonists in Leckie's Imperial Radch Trilogy and de Bodard's Universe of Xuya series have but a transient claim on humanity, and their capacity to feel challenges humans' exclusive claim to emotional life.

The human-machine sentient spaceship's hybridity prompts the discussion of emotions in humans and nonhuman others, pinpointing the connection of emotional experiences and embodiment, accentuating the physical manifestation of the affect in the body. In "The Affective Turn: Political Economy, Biomedicine, and Bodies," Patricia T. Clough describes attention to matter and body of the "affective turn" as the "most provocative and enduring contribution," writing: "The turn to affect points [...] to a dynamism immanent to bodily matter and matter generally – matter's capacity for self-organization in being informational." (Clough 206-7) The human-machine sentient spaceship's body, a confluence of living and non-living matter, capable of affecting and being affected, blurs the boundaries of traditional dichotomies uniting the seemingly disparate parts in the shared affect. The material grounding of the affect recourse to the interconnection and interdependence of the embodiment and subjectivity. The cyborgian designs of human-machine sentient spaceships,

thus, signify the emergence of an alternative subjectivity, based on an embodiment strikingly different from the standard human.

Emotional life of human-machine sentient spaceships does not only define their subjective embodied experience, but also structures their social connections and relations with other agents. The social aspect of emotions, rather than reflecting the inner workings of the hybrid psyche, draws attention to the emotional expressions, crucial for social interactions. The recognition of the difference of the human-machine sentient spaceship as an emotional subject often entails exploration of how they learn emotions and emotional expressions, touching upon the cognitive psychology inquiries into universality and ambiguity of emotions, apparent through the comparison of different cultures and different species. While fundamental emotions seem to be recognisable and universal, their expression depends on the context and conventions of community, where the subject gets these emotions from. Oatley, explaining cross-species emotions in *Emotions: A Brief History*, and referring to Charles Darwin's work, writes: "[H]uman emotions are not only similar in humans all round the world, but some of them are similar to those of other animals." (21) At the same time, cultural differences define more complicated contextualised emotional reactions and expressions, stressing that emotional behaviour is partially learned from the environment. (31) Human-machine sentient spaceships, regardless of whether they are perceived as human or nonhuman, must differ in emotional behaviour not only in terms of embodiment, but also in cultural aspect, accentuating how the social environment where they develop differs from humans.

#### **4.1 The Human Source of Emotions**

Emotions in Western culture, perceived through the prism of Darwin's evolutionary account of their origins, lay bare the animal origin of humans, and expose their irrational behaviours; they also serve as a reliable indicator of humanness, in the context of the human-machine combination, contrasting the feeling humans to the unfeeling machine. Oatley and

Jenkins, describing Western perception of emotions in *Understanding Emotions*, write: “Emotions are often considered as out of control and destructive, in comparison with the constructive products of thoughtful consideration. Emotions are also sometimes seen as primitive and childish rather than civilized and adult.” (38) At the same time, emotions are “valued as the basis of authenticity.” (59) The duality imbedded in this vision of emotions can be traced in works negotiating the humanness of the human-machine sentient spaceship, including “Solar Plexus,” the Brainship series, and “Starcrossed.” Emotions in these human-machine sentient spaceship can be irrational, dangerous, even lethal, but are invariably human, originating in the organic substrate, while the mechanical part acts either as a suppressant, for instance in “Solar Plexus” (1952) and “Starcrossed,” or a mediating environment for organic emotions in the Brainship series.

The first version of “Solar Plexus” sees the human as a dominant element of the Bennett-*Astrid*, leaving Bennett’s personality unchanged in the mostly mechanical body; in the later version the mechanical element takes over the organic part, limiting emotions, and consequently, creativity and ingenuity.<sup>34</sup> Emotional reactions or their absence are responsible for the Bennett-*Astrid*’s motivations: in the earlier version the Bennett-*Astrid* desires to avenge his ostracism with the army of robots and “whoppers of guns” and abducts Kittinger as “material” for another robot; in the later version there is not “enough of Murray Bennett [in him] to know what [he] should do next,” so he needs Kittinger’s guidance. (Blish *Astonishing* 87-8, *Human* 211) The fully human Bennett’s desire to advance the development of space travel, building a faster generation of ships, escapes the Bennett-*Astrid*’s

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<sup>34</sup> Fundamental emotions, like fear, are grounded in instinctual reactions, which Keith Oatley describes in *Emotions: A Brief History*. (22) Massumi, in turn, in “The Supernormal Animal” explores the connection between adaptation to the environment in nonhuman animals and human creativity, concluding that the same drive – “supernormal invention,” based on the variation of the instinct – is behind both. He writes: “For if we can call this Art, it is because the human has the same self-animating tendency to supernormality. Only when we experience it in our own desiring lives we arrogantly tend to call it culture as opposed to nature.” (10) The connection of emotions, instinct, and creativity present both in human and nonhuman animals firmly situates them in the organic world, which in the dichotomic worldview represents the non-living matter as lacking the potential for either of the connected phenomena.

understanding as an emotional purpose, leaving only a task of creating more human-machine hybrids behind in the 1952 version. Likewise, emotions and their absence are crucial for the Bennett-*Astrid's* downfall. In 1941 version, the Bennett-*Astrid*, assured of the imperviousness of his hybrid body, underestimates his prisoners' capacity to inflict harm on him. In the 1952 version, the Bennett-*Astrid's* inability to empathetically understand Kittinger's abhorrence towards the idea of creating more human-machine sentient spaceships, as well as his intent to destroy his captor, allows the prisoners to fulfil their plan. In the later version, even the intention to use Kittinger as a source material for another sentient spaceship is not malicious, but rational, as Kittinger proves to be unwilling to assist the Bennett-*Astrid* otherwise. Thus, the first version exposes suspicion towards emotions, judging them as a dangerous rudiment of humanness, while the second considers emotions as evidence of humanness, without which the machine is doomed to fail in a confrontation with the human.

Despite significant differences in portraying emotional life between the original McCaffrey's novel and later co-authored work, the opposition between the feeling humans and unfeeling machines remains a core world-building feature. Helva and Teron's conflict is caused by his preference for the machine over the "unreliable organism" of shell-people and dream of a computerised world. (McCaffrey *The Ship Who Sang* 197) As the plot develops, Teron is shown as a coward, limited and unreliable, while Helva successfully fights drug-runners capturing her, and saves other shell-people with their partners, clearly showing where the reader's sympathies should lie. *The Ship Who Searched* brings the opposition to a new level, introducing AIs not only as a technological update on McCaffrey's 1960s setting, but also as a point of contrast for shell-people. Lackey's AIs are unable to experience emotions and lack individuality: "AIs with chips instead of hearts," "as impersonal as an AI." (McCaffrey and Lackey 67, 86) She draws a clear line between shell-people, humans in a mechanical body, and machines, which cannot have human understanding, authentic

cognitive processes, and genuine feelings.<sup>35</sup> Shell-people's creativity, arises out of instincts and emotions embedded in the organic substrate of their rudimentary bodies and gives them advantage over limited AIs. However, in line with the Western perception, emotions in *The Ship Who Searched* can cause a decrease in performance with their illogical, irrational nature, and thus should be regulated and controlled, offering a contrast to the positive attitude to emotions verifying the humanness.

“Starcrossed” brings forth the conflicting trends in envisioning emotions, making them a plot-driving force: emotions awaken in the MOB due to the inherent humanness of the controlling brain, but as a rudimentary remnant in a new composite unity and mechanical body they cause a distraction and lead to a lethal accident. The healthy undivided brain of the probe is focused on functionality, thinking in a heavily technical and inexpressive language; vague emotions in the background are overtly defined as a rudimentary experience of the organic substrate: “A portion of MOB recognized the distant echo of pride in usefulness, but the integrated self knew this to be a result of organic residues in the brain core.” (Zebrowski 237) The malfunction triggers the increasingly intense emotional experience: from patience in attempts to re-establish the missing link to a “spiralling influx of sensations” of pleasure. (239) The “never-known delights” of emotions distract the MOB from the changing conditions outside, eventually becoming the unbearable heat of the star. Hence, human emotions become a hazard for the cyborg, radically affecting performance, uniting both the suspicion of the 1941 version of “Solar Plexus” and urge for emotional control and regulation of *The Ship Who Searched*.

Emotions in these works not only serve to police the boundary between the human and the nonhuman, but also trouble the body/mind dichotomy imagining the ways difference

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<sup>35</sup> This approach aligns with John Searle's Chinese Room argument, explaining how a calculating process in a machine intelligence is different from a cognitive process happening in an organic brain. He illustrates it with an example of a person with a Chinese dictionary, translating symbols without knowledge of the language, and argues that this activity will not lead to the person's knowledge of Chinese, just like calculation process in a machine is not equal to cognition. (418)



in the embodiment might influence perception and subjectivity. Varying from complete disregard to the body to the close attention to the endocrinal changes entailed by the addition of the machinic element, the works only agree on the human element as a sole source of emotional responses, while the mechanical element is a mere accessory, which causes shifts, but does not directly participate in the process of affecting and being affected. Blish's "Solar Plexus" manages to visit both ends of the dichotomy, situating emotions fully in the human brain in the first version, and leaving them behind with the organic body in the second. McCaffrey's brainships emote in the same way as humans, however, the mechanisms and controls their bodies provide for emotional state are specific for the brainship embodiment. In "Starcrossed," Zebrowski, just like Blish in the first version of "Solar Plexus," defines the composite brain of the probe as a seat of emotions, but like McCaffrey recognises chemical triggers of the endocrinal system behind emotions and uses it to create a hallucinatory and deeply emotional experience.

The radical shift in the emotionality of the human-machine sentient spaceship in "Solar Plexus" is reflective of a closer attention to possibilities that the merging of the human and technology involve, and of a deeper anxiety connected to the imaginations of such a merger.<sup>36</sup> The 1941 version posits that emotional responses exist independently of the body, so the emotional entity of the Bennett-*Astrid* does not differ emotionally from a human, "tak[ing] pleasure in gloating over his achievement," raging, and getting scared. (Blish *Astonishing* 88) Taking a U-turn on emotionality, the 1952 version stresses the dependence of emotional capacity on the human body: the boastful talkativeness of the Bennett-*Astrid* in the first version turns into an "almost mindless wealth of detail of a public-library selector," anger is replaced by complacency, fear is flattened by the absence of visceral reactions. (Blish *Human* 210) Accentuating the bodily origins of feelings, the machinic rigidity permeates the Bennett-*Astrid's* physical characteristic connecting him to the original human:

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<sup>36</sup> This surge of techno-anxiety is discussed further in the next section of this Chapter.

the “soft” and “silky” speech of the earlier Bennett-*Astrid* is ousted by a “loud and harsh” tone of a “voder,” “without a trace of feeling,” in a critical situation. (213) The Bennett-*Astrid*’s voice remains the only way of expressing emotions, habitual for humans, and losing it in the second version indicates the loss of the claim to humanness altogether.

The Brainship series describes the emotional life of shell-people as similar to humans’, but does not equate their experiences, describing the influence of the machinic component as inevitable. Scortia and Zebrowski in the introduction to their anthology speculate on the influence of technological modification on human endocrinal system, including the changes in emotional perception. (xvii) Similarly, McCaffrey accentuates anatomical and physiological differences by replacing blood with nutrient fluids and making Helva aware of these differences and their possible impact on her well-being and decision-making. For instance, increased acidity of Helva’s nutrient fluids can be caused by traumatic experiences, like sense deprivation, and lead to rash decisions, like choosing Teron as a partner. (McCaffrey *Ship* 176, 192) The acidity of the nutrient fluids in *The Ship Who Sang* is regulated externally, which changes in “Honeymoon,” where Helva regulates it herself. (McCaffrey *Unicorn* 300) Lackey retains this change, allowing shell-people to be in control of their nutrient fluids’ acidity and even enhances it, making it a way to improve performance. The gradual increase in control over one’s own physical and emotional state refines the transhumanist focus of the series, showing technology as a means of overcoming the limits imposed by the physicality of the body.

*The Ship Who Sang* enhances the exploration of the connection of subjectivity, emotional perception, and embodiment by trying to imagine emotional perception in a radically different gaseous Corviki body. In the Corviki envelope, Helva perceives emotions as energy and equations, and emotional expressions are differentiated by colours of the envelope itself or its energy emissions. The first mission to Beta Corvi aims to exchange a theatrical performance of *Romeo and Juliet* by the best human actors in Corviki envelopes

for a design of an ultra-fast engine. For the Corviki, emotions expressed in art are a new form of energy, capable of “[rejuvenating] static energy groups once considered lost beyond reactivation.” (McCaffrey *The Ship Who Sang* 155) In this elegant move, McCaffrey gives emotions a power to resurrect aliens, rejecting the distrust towards emotions, and imaginatively attempts to show a different subjectivity, arising in an entity embodied differently from a human. This foregrounded materiality of the body, as well as its significance for perception gives a glimpse of a more-than-human reality, where the human is not a hegemonic or the only possible sentience and intelligence.

The emotional experience of the MOB in “Starcrossed” essentially happens in a virtual, imagined space, but it relies on the material substrate of the composite organic brain, and, considering the outcome for the probe, makes clear that the organic matter is vulnerable, susceptible to rudimentary influences, while the pure mind, an aspirational ideal, is free from such limitations. The rogue female part conjuring tempting images uses physiological reactions to chemicals – hallucinogens – to obtain the desired effect, disrupting the heavenly purity of the man, in an almost biblical move. The innocence of the male part and the blissful state of being unemotional, rational, and unperturbed by earthly concerns is a contrast to the lowly fleshly delights, which ultimately shows the dangers of transgressing the boundary between the body and the mind, letting the body take over the seat of control rightfully belonging to the mind.

The social aspect of emotional life of the human-machine sentient spaceship, including differing emotional expressions in independent communities and species, and emotionally significant social relations, takes a prominent place in the Brainship series, while “Solar Plexus” and “Starcrossed” pay relatively little attention to it. While in other aspects Lackey mostly follows McCaffrey’s original concept, their co-authored novel treats emotionality in shell-people quite differently from *The Ship Who Sang*. McCaffrey does not accentuate the difference in emotional expressions that shell-people might have, showing

them as integrated into a network of social interactions with unmodified people, and allowing them to fully absorb the social conventions of emotional responses. McCaffrey and Lackey's novel implies that shell-people form an isolated community with a different convention of emotional etiquette, imitating AIs, which significantly diverges from the optimistic and inclusive vision of *The Ship Who Sang*.

In *The Ship Who Sang*, Helva's emotional journey stitches together the disparate plots of the initial short stories, allowing to turn them into a novel: it starts from her infatuation with Jennan, her first brawn, and grief over losing him, relations with Theoda and Kira helping to deal with this grief, the conflict with Teron, her second – and very dissimilar to Jennan – brawn, and ends with romantic relations with Niall, which continue in “Honeymoon,” and “The Ship Who Returned.” McCaffrey believes that emotions, though experienced and expressed differently by different bodies and different species, are universally understandable, and can be used as a common language for different individuals. Being technologically modified since the first months of her life, Helva has a limited experience of emotions in an unmodified body, which does not prevent her from understanding unmodified humans and being understood by them. The Corviki envelope, giving a different perception, remains comprehensible and even preferable to some groups of people. Admitting the presence of anthropomorphising, this approach, nevertheless, is a hopeful attempt to find a common ground in communication for different communities, which was of utmost importance in the Cold War Era of suspicion and distrust when the novel was written.

In *The Ship Who Searched*, emotions in shell-people point to a critique of exclusionist practices towards minoritarian groups, in this case people with disabilities, othering those who do not fit into the standard populace and creating gaps in understanding between different groups. McCaffrey and Lackey's shell-people are brought up separately from the unmodified peers: “They don't really understand emotions, because they've never been

allowed to experience them or even see them near at hand.” (121) The contact between them in professional environments later in life becomes the only source of emotional development for shell-people, which is seen by some shell-people as corruption: “living around softies will contaminate even the most rule-bound shellpersons.” (119) Though the comparison between AIs and shell-people invariably privileges the latter, the lack of emotional reactions in the AI is copied by shell-people by flattening their voices, thus efficiently concealing their emotions. (82) This treatment of emotions is indicative of a deep association with Western traditional vision of emotions as irrational and unproductive, which is enhanced by using chemicals to emotionally self-regulate to increase shell-people’s performance. But crucially, it exposes the objectification of shell-people by imposing a social convention where they need to seem similar to the technological other, making their exploitation increasingly easy.<sup>37</sup>

The depiction of emotions in the human-machine sentient spaceship in “Solar Plexus,” the Brainship Series, and “Starcrossed” mainly testifies to their human nature, with a frequent contrast between the emotional humans and unemotional machines, sustaining the firm boundary between the human/nonhuman. Sharing the Western traditional attitude towards emotions, these works emphasize their role in creativity and in proving authenticity, making emotions crucial for connecting disparate groups, and simultaneously imbue them with negative semantics of unreliability, irrationality, and vulnerability. Even though some works see brain as the centre of producing emotions, as well as controlling them, the easy divide between the mind and the body implied by it is persistently challenged by the reminders of the material, embodied nature of affect, inherently connected with emotional reactions and responses. Thus, emotions, while sustaining one traditional dichotomy – the human/machine, constantly challenge the body/mind divide, stressing the porosity of the boundaries between them.

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<sup>37</sup> Objectification and exploitation of shell-people is discussed further in Chapter Five.

## 4.2 Feeling Machines

In the second group – the Universe of Xuya Series and the Imperial Radch Trilogy, the connection of emotions and humanness is dropped, emotions are not called upon to prove the entities' humanness, as these entities neither see themselves as nor want to be humans. The human element present in both designs does not lay a claim over being the source of an experience; the whole assemblage – its organic and inorganic parts – are stirred by the affect. Massumi, theorising “affect” as “intensity, embodied in purely autonomic reactions,” and the difference between “emotion” and “affect,” writes: “An emotion is a subjective content, the sociolinguistic fixing of the quality of an experience [...] Emotion is qualified intensity, the conventional, consensual point of insertion of intensity into semantically and semiotically formed progressions, into narrativizable action-reaction circuits, into function and meaning.” (*Parables* 25, 28) It situates affect in the body, while allocating emotions with social and personal meaning, directing the way this subsection approaches the analysis of the emotions of human-machine sentient spaceships, with complex bodies with an AI or a technologically modified foetus in the centre. With the consideration of the embodiment and affect as the initial entry point, the consideration of mindships' and Radch spaceships' emotions investigates the functionality of the emotions, disconnected from human animal evolution, and dwells on the social dimension of emotions in the Universe of Xuya and the Imperial Radch Trilogy.

Affect arising in a unity of heterogenous elements comprising mindships' bodies is a complex phenomenon, rippling through the materiality of metal walls, reflected in the organic heartbeat of mind in the heartroom, and perceptible in the avatar. Their bodies live up to Spinozian's vision of the capacity “for affecting and being affected,” interacting directly with humans both on board and outside. (Massumi *Politics* 3) Affect, as Massumi explains, “is simply a body movement looked at from the point of view of its potential – its capacity to come to be, or better, to come to do.” (7) Affect is not limited to one body, it

engages all bodies within range, which makes humans in mindships' bodies share the affect, causing a change in their perception of space around them. In "Ship's Brother," a mother of a human son and a mindship attempts to mediate her children's relations after a conflict during a visit to her mindship daughter, Mi Nuong: "I ask about you; and feel the ship contracting around me – in sadness, in anger?" (De Bodard, "Ship's Brother")<sup>38</sup> The experienced affect – "intensity," has no fixed meaning, its physical manifestation inviting interpretation from all agents sharing the experience. The avatars equally participate in the affect, always giving a glimpse of the larger whole behind the virtual body, becoming a supplement to the intensity and movement of the affect produced by and occurring in a posthuman body without attempting to replace the materiality. The reverberation of affect through both the material and virtual parts, simultaneity, and connectivity in the mindship's body offers a radically materialistic account, where the virtual does not replace, but enhances the bodily experience, decisively divorcing the idea of the redundancy of flesh, habitually associated with virtuality.

With both AIs and humans equally subjected to affect, emotions in the Radch AI spaceships are a sophisticated entanglement of impulses from the mechanical and organic parts, where the hegemonic role of the AI is challenged by the artificial intelligence and human body interaction, where the latter has a definite impact on perception, blurring the body/mind boundary. While an AI ship with multiple ancillary bodies, like *Justice of Toren*, does not pay much attention to emotions of the bodies: "Usually one body's off-kilter emotion was a minor dismissible thing," it still recognises the difference in perception the human body gives and has a range of methods to regulate the emotional reactions of the bodies. (Leckie *Ancillary Justice* 252) When One Esk Nineteen is disconnected from *Justice of Toren* and when the ship is subsequently destroyed, the ship's AI finds itself lacking

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<sup>38</sup> The short story is a first-person narrative from mother's point of view. The human child is referred to as you, the mindship is referred to in the third person.

extensive means of self-regulation and experiences the unfiltered emotional and physical responses of a single human body, exposing the influence proxy bodies have always had in the complex assemblage of a Radch sentient spaceship. In the reverse situation – when an AI spaceship loses its ancillaries – the influence is as clear. *Mercy of Kalr*, whose ancillaries are replaced with independent human troops, feels the change in perception as lack, admitting: “I like my soldiers, but I miss having ancillaries.” (Leckie *Justice* 362) Constructing a multifaceted depiction of experience, Leckie shows a deep interconnectedness within the assemblage of a Radch spaceship, forming strong links transgressing the boundaries of the flesh and metal, the born and the artificial, nature and culture.

Disentangled from the evolutionary history, emotions of the bodies, defying the boundary between the born and the manufactured in the Imperial Radch Trilogy and the Universe of Xuya Series, have little to do with rudimentary remnants of the evolutionary process, which promotes the contemplation of other purposes of emotional responses and evaluations. Oatley and Jenkins, explaining the functions and effects of emotions, writes: “An emotion [...] is based on something like a built-in inference about what has happened and what to do next.” (*Understanding* 258) They note that especially in complex situations, emotions provide a referential “ready repertoire of actions,” which with all its limitations is a better option than random actions. (258) The connection of emotions with decision-making questions the traditional implication of the irrationality of emotions but does not eliminate the spontaneity and strength of emotions that makes them difficult to contain and control. In addition to decision-making, emotions as “ready repertoire of actions” assist in navigating social relations, as the human-machine sentient spaceships – whether accepted by humans or not – exist within societies.

Tapping into Vietnamese culture, de Bodard pays a lot of attention to familial and other social networks, focusing on group dynamics of social relations, which inadvertently



become emotion-laden, and mindships as participants of these groups are expected not only to follow social conventions, but engage emotionally with other agents. Ships are fully integrated into social and professional life; they are equal and highly respected members of Dai Viet families, they choose their occupation, make friends and connections among humans and nonhumans other than their family members. But the connection of nurture and affection formed during the pregnancy and monstrous childbirth taking a huge toll on the mother is crucial for the emotional life of mindships: “Like all Minds, she was hungry for the touch of a human soul; entwined around my thoughts, and in her eagerness to be born, she was pushing outwards, dragging me with her.” (De Bodard “Ship’s Brother”) Mindships sustain their communication with their family throughout the parent’s life and beyond in normal circumstances, and severing of these ties is perceived as traumatic, like in *The Tea Master and the Detective*, where the mindship loses her connection with the family after being trapped in deep spaces and is unable to work again. With the mindship’s physique so pointedly nonhuman, their belonging to familial networks poses family as an interspecies unity, in which nonhuman agents can participate, invoking Haraway’s concept of kinship, transgressing the boundaries of different species and ontologies.<sup>39</sup>

In the Imperial Radch Trilogy, emotional responses that Breq cannot control become a giveaway when she confronts Mianaai in *Ancillary Justice*, but simultaneously *Justice of Toren* recognises the role of emotions in simplifying a complicated decision-making process with too many variables. Breq attracts Mianaai’s attention, when her emotional reactions contradict those expected from her disguise, and he guesses that she is *Justice of Toren’s* ancillary, recognizing the songs she hums as part of One Esk’s personal collection. The design of AI spaceships of the Radch Empire itself link emotions with intelligence, as the Lord of the Radch admits: “They still get attached, still have favourites. [...] I couldn’t take that away without making them useless to me. [...] They have to be smart. They have to be

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<sup>39</sup> Haraway’s concept of kinship is discussed further in Chapter Two.

able to think” (Leckie *Justice* 338). In its turn, *Justice of Toren* acknowledges using emotions to parse complex decisions: “Without feelings insignificant decisions become excruciating attempts to compare endless arrays of inconsequential things. It’s just easier to handle those with emotions.” (88) The Radch Imperial Trilogy portrays emotions as complex phenomena, crucial for Breq’s motivations and her survival after *Justice of Toren*’s destruction, the latter detailed above. Emotions drive the development of her personality, her decision-making, and make her recognizable through her hobby, for better or worse. This complexity of emotions, and variety of their functions resists the superficial opposition of emotions and rationality, characterizing Western traditional perception of emotions.

The presence of affect and emotions in the human-machine sentient spaceships recognising themselves as nonhumans blurs dichotomic boundaries of nature/culture, but in a manner mindful of the difference, paying attention to the modes of emotional expression dependent on the body and social involvement from a position of a nonhuman entity, which emphasises specifics of the human-machine sentient spaceships’ subjectivity. Massumi recognizes both the ubiquitousness of affect, and its distinct manifestation on different levels:

Returning to the difference between the physical and the biological, it is clear that there can be no firm dividing line between them, nor between them and human. Affect, like thought or reflection, could be extended to any or every level, providing that the uniqueness of its functioning on that level is taken into account.<sup>40</sup> (*Parables* 37)

De Bodard’s mindships diverge in their emotional expressions, stemming from a different embodiment, which influences the social conventions of interactions between them and

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<sup>40</sup> Massumi refers to the “physical” and the “biological” to distinguish the organic life and non-living matter. Elaborating on the difference between them as related to the affect, he writes: “The distinction between the living and the non-living, the biological and the physical, is not the presence or absence of reflection, but its directness.” (*Parables* 36)

humans. The Radch AI spaceships do not usually emote with faces or voices, like humans, using their own ways to express emotions; learning to express emotions like humans does not come naturally to them, and is an arduous task.

De Bodard's mindships, both an engineering project and a product of evolutionary process of merging the human and technology, have emotions, but express them differently from humans, with a portion of them remaining so alien as to be incomprehensible to humans. Mindships' embodiment and experience of travelling in deep spaces inevitably influence their subjectivity and perception, in a way that makes them difficult to understand even for their own mothers, for instance, Mi Nuong's mother attempting to explain the difference in her extended address to her son, elaborates: "Mi Nuong's voice was uncannily serene; but of course, navigating the deep spaces, the odd dimensions that folded space back upon itself, she saw things we didn't." (De Bodard, "Ship's Brother") Both based on the difference in embodiment and experience, mindships' physical expression of emotions includes pointedly nonhuman components, like visible overlays on mindships' walls transmitting poetry and landscapes. This difference also impacts the way humans interact with mindships, with a special set of social conventions serving as an equivalent to human traditional exchanges, like offering food and welcoming them to human dwellings by letting them into the virtual network to let their avatar show in the virtual overlays.

The complexity of the emotional life of Leckie's human-machine sentient spaceships does not translate into facial expression and tone of voice, habitual for humans, leaving the ship and ancillaries completely emotionless from the human point of view. The ships and stations communicate their emotions indirectly, through their treatment of humans on board: "But it can express its disapproval [...] We do it all the time. Mostly nobody notices, except they visit another ship or station and suddenly find things inexplicably more comfortable." (Leckie *Justice* 382) One Esk Nineteen, separated from the ship, needs human emotional expressions to conceal her identity and carry out her revenge mission. Knowing the

physicality of emotions through the access to all the physiological data of her officers and being able to deduce their emotions from these indicators, she struggles with transferring this knowledge into practice. Even after nineteen years, artificiality in Breq's emotional responses is evident for an attentive observer, like Dr Strigan, the owner of the Presger gun: "Your expression, your tone of voice, it's always right but it's always ... always studied. Always a performance." (133) Breq's attempts to emote like humans remain a performance, reiterating the difference in AI's subjectivity, even when it is in the human body.

The attention to materiality of bodies in discussing the emotional life of the human-machine sentient spaceship in the Universe of Xuya Series and the Imperial Radch Trilogy encourages questioning the tightly guarded boundaries between the living and non-living, and seeing their permeability and ambiguity when it comes to the affect. Endowing mindships and Radch AI spaceships with a rich emotional life does not aim to erase the difference between the human and nonhuman in a universalizing and homogenising sweep; rather it questions the anthropocentric systems, refusing to recognize the other as equal on the basis of – or in this case lack of – emotional life. Emotions in mindships and Radch spaceships are neither an ecstatic proclamation of unity of the whole world, nor a dismissal of value of the living. They are a way of imagining a different subjectivity inhabiting a different embodiment and possessing different ways of interpreting affects and expressing associated emotions.

## **Conclusion**

The presence of the human element in the human-machine sentient spaceship makes the question whether the entity is human or not immensely significant, the answer to it defining the ontological position and place in the hierarchical worldview. The attempt to define humanness starts from the design of the spaceship's hull itself and the manner of its connection to the human, generally recognizing the central place of the human element as a sign of humanness, with the meaningful exception of the second version of "Solar Plexus,"

where technology erases the human even when brain – the seat of mind, a humanist stronghold of reason – is directly linked to the mechanical body. When the centrality of the human is compromised and the AI takes its place, there is no doubt that the sentient spaceship is nonhuman, however, instead of repulsion and demonization, characteristic of humanist and transhumanist trends, it opens the trope for the discussion of a more-than-human world, abandoning anthropocentric vision. The answer to the question of humanness defines whether the human-machine sentient spaceship deserves the right for gender identification and sexual desires, gender and sexuality being the categories initially reserved for humans. But the cyborg, a “creature in a post-gender world,” questions biological determinism, equally becoming a source of the monstrous conflation of the human and nonhuman and freeing the imaginative exploration of gender performance in a partially human body. (Haraway *Reader* 9) Emotions, used as another source of recognising an entity as human, also provide a means of contrasting the human and machine, presenting the latter as superior to the former on the ground of having emotions, though emotions themselves are quite irrational and potentially dangerous. In contrast to this, emotions in the technological other both explore the origin and source of emotions, relying on the materiality of affect, and question the opposition of the rational and emotional with the role of emotions in the decision-making. Whether human-machine sentient spaceships are human or not defines their positions in the society and social attitudes to them, offering a variety of outlooks, but in general indicating that the transgression of the human/nonhuman boundary involves a noticeable step down in the hierarchical systems. The plots involving an exploration of human-machine sentient spaceships in wider social structures and contexts challenge this presumption, either trying to prove their humanness, like the Brainship Series, or challenging the anthropocentric systems with the portrayals of the technological others as independent agents. The porosity of boundaries of the human/nonhuman, the born/manufactured, flesh/metal, and nature/culture in the bodies of the human-machine sentient spaceships

invites the reader to see the world as complex, non-heterogenous, and interconnected; even in works where the transgression of boundaries is strictly punished, the possibility and promise remain open.

## Chapter Two: The Organic Sentient Spaceship

The second combination of the sentient spaceship to appear in the SF megatext is the organic sentient spaceship, which can include mechanical parts, AI and computerised elements, and even humans, but what differentiates it from any other variation of the sentient spaceship is the presence of a nonhuman organic component, either belonging to an alien or terrestrial species. In contrast to the human-machine combination, the organic sentient spaceship, even with the presence of human elements remains pointedly nonhuman, so the focus of this chapter is not to explore how human the organic sentient spaceships are but contemplate their relations with the human. The organic sentient spaceship conceptually frames humans' position and role in the sentient spaceship differently from the human-machine combination. Eschewing the dichotomic opposition between a central position, rendering technological elements as augmentative or compensatory, and a peripheral position, challenging both the anthropocentric paradigm and utilitarian attitude to technology, the organic sentient spaceship places the human into a network of relations with the nonhuman world. The organic sentient spaceship provides a platform, where mammal, fish, insect, plant, and non-organic components meet to create a spacefaring entity either to reiterate the anthropocentric paradigm or to challenge the existing exploitative and violent attitudes the human harbours towards otherness.

The uneven distribution of this combination on the timeline of the trope development predetermines the focus on the 1990s-2010s, with only one work from the 1950s – Robert Sheckley's "Specialist," which this dissertation sees as the first example of the organic sentient spaceship.<sup>41</sup> After "Specialist", there comes a long break in the combination and it returns with a new creative impetus of space opera rebranding in the 1990s and 2000s, which the chapter reflects, analysing Stephen Baxter's Xeelee Sequence (1987-2018), and two TV

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<sup>41</sup> For numerical and timeline data, see Appendix A.

shows – *Lexx* (1997-2002) and *Farscape* (1999-2003). The selection of works to focus on from the Xeelee Sequence is governed by the relevance to the analysis of the relations of the human and the spacefaring animals – the Spline, most prominently described in *Timelike Infinity* (1992), “Breeding Ground” (2003), and *Xeelee: Redemption* (2018), with some details from “Blue Shift” (1989), and “The Great Game” (2003), mentioned in the Chapter. The 2000s and 2010s are characterised by the engagement of white female authors and female authors of colour, which the Chapter reflects with the consideration of Elizabeth Bear and Sarah Monette’s “Boojum” (2008) and three novellas from Nnedi Okorafor’s Binti Series (2015-2019). The selection aims to reflect diversity both in terms of gender and race of the authors, and the composition of the sentient spaceship, covering prominent trends in the nonhuman organic sentient spaceship.

The chapter is divided into four major sections, reflecting major components of world-building related to the sentient spaceship, but adjusted to the organic sentient spaceship to capture the multifacetedness of this combination. The first section is dedicated to the body of the organic sentient spaceship, paying a special attention to their design or evolutionary pattern of development. The second section investigates how gendering or lack thereof affects the representation of the organic sentient spaceship and shapes the relations between the human and the nonhuman. The third section is dedicated to reproduction of the organic sentient spaceship and compares its portrayal to that of humans in the works under analysis. The fourth section deals with interspecies communication, considering how emotional connection can pave a coevolutionary path for humans and nonhumans when approached from a non-anthropocentric perspective. The analysis in the Chapter is based primarily on new materialist and posthumanist scholarship, including the works by Barad, Alaimo, Haraway and Braidotti. The Chapter engages with Barad’s concept of intra-actions, Alaimo’s concept of trans-corporeality, Haraway’s concept of “companion species” and Braidotti’s posthuman critical challenge to anthropocentrism. The Chapter employs affect



theory, relying on Massumi's works, to consider the emotional life of the nonhuman organic sentient spaceships.

## 1. Natural and Designed Bodies

Parallel to the first section of the first chapter, this section considers organic sentient spaceships' bodies and the role of the human in them; however, as some of these ships lack a human component, this subsection concentrates on the human's involvement in the development of these spaceships, dividing the organic sentient spaceships into self-evolved and tailor-made by humans for spaceflight.<sup>42</sup> The independent evolutionary progressions of the spaceship from "Specialist," the Spline from the Xeelee Sequence, and boojums from "Boojum" predetermine the changes in their bodies and symbiotic relations steering them towards spaceflight, and setting them as agential beings. Tailor-designed organic-mechanical entities, like the Lexx from *Lexx*, Moya from *Farscape*, and New Fish from the Binti novella series depend on their creators in their body shapes, symbioses, and life cycles, their very origin revealing the relations of subjugation between the nonhuman animal and the human. The divide implies the opposition between agency and lack thereof, but the agential potential in the organic sentient spaceship eludes binaries, giving an opportunity to analyse how the presumptions on agency are played out in correlation with the idea of independent evolution or human design.

The body of the organic sentient spaceship is always a composite entity of different species working together, and their constant material and informational exchange defines them as symbiotic entities. In "A Symbiotic View of Life: We Have Never Been Individuals," Scott F. Gilbert, Jan Sapp, and Alfred I. Tauber suggest, describing the role of symbiotic processes in formation of an eucaryotic cell, and multicellular organisms: "The discovery of symbiosis throughout the animal kingdom is fundamentally transforming the classical

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<sup>42</sup> The "human" in this and subsequent chapters embraces not only the human animal, but also all humanoid aliens and other anthropomorphic species who act as humans and with whom sentient spaceships interact and form different relations.

conception of an insular individuality into one in which interactive relationships among species blurs the boundaries of the organism and obscures the notion of essential identity.” (326) The organic sentient spaceship, as a conglomerate of species, entities combining different genetics and forming multiple symbiotic connections, and constant chemical, genetic and social exchange, which involves both humans and nonhuman actors, dramatizes evolution as a cooperative process, where there is no clear hegemonic agency.

The prevalence of the organic in the bodies of the organic sentient spaceships becomes a gravitational power pulling the attention to bodily processes that take place within and influence the passengers, creating the environment. Their – often radically naturalistic – portrayals communicate the materiality of the organic sentient spaceships, challenging the body/mind and nature/culture dichotomies in a manner congenial with the new materialist ideas in “Specialist,” *Farscape*, “Boojum,” and the Binti series. Rick Dolphijn and Iris van der Tuin write, describing the effect of new materialism and its implications for dualisms: “[T]he new materialism produces a revolution in thought by traversing modernity’s dualisms (structured by a negative relation between terms), and by constituting a new conceptualization of difference (structured by an affirmative relation) along the way.” (115) At the same time, these processes invoke body horror and the abject, which open a way to reassert the grossness of the body and preference for the disembodied existence over the living flesh; the latter is especially the case in the Xeelee Sequence and – with some reservations – in *Lexx*.<sup>43</sup>

The element of body horror, present in almost all considered works, hinges on the concept of the abject, as this horror arises out of the organic sentient spaceship’s appearance, nutrition, childbirth, and gender, infringing the boundaries of normality, as well as the

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<sup>43</sup> Ronald Allan Lopez Cruz, analysing the relations of body horror and biological horror in “Mutations and Metamorphoses: Body Horror is Biological Horror,” hypothesizes: “[B]ody horror finds strength in the way it goes against what is considered normal anatomy and function in biological species (not limited to human): that it is indeed biological horror.” (190) The bodies of organic sentient spaceships possess abnormal anatomy and functions as compared to the species they are similar to or based on, which makes them examples of body/biological horror.

ultimate proximity, and even intimacy of the passengers with the inside of their bodies. Julia Kristeva, who first conceptualized the abject, writes:

[T]he abject simultaneously beseeches and pulverizes the subject, one can understand that it is experienced at the peak of its strength when that subject, weary of fruitless attempts to identify with something on the outside, finds the impossible within; when it finds that the impossible constitutes its very being, that is none other than abject. (5)

The abject both comes from inside of the self and is rejected by the self to define its borders, its autonomy, substantiating the fascination and disgust that it invokes. The rejection of the abject is an action establishing boundaries, dichotomies – inside/outside, the self/other – and hierarchies. As a boundary-making practice, this rejection, or the lack of it, exposes the vector of the relation between the human and the organic sentient spaceship – towards cooperation or violence.

### **1.1 Self-Evolved Species**

The organic sentient spaceship is always a conglomerate of species acting together to achieve survival in outer space, and its body is a house to numerous species sharing symbiotic connections, creating the environment both for sustaining the life of the spaceship and the passengers. The independent process resulting in the development of the organic sentient spaceship testifies both to the significance of symbiotic relations between different species, as well as their agential potential to freely mingle and create a complex entity. Symbiotic relations are evident in all self-evolved organic sentient spaceships: the alien spaceship in “Specialist,” the Spline, boojums; but their representation depends on the general orientation of the work. “Specialist” uses symbiosis as a metaphor for cooperation between different individuals, referring to the contemporary political situation. The Xeelee Sequence commodifies symbiotic relations, making them an object of interspecies trade, and

later human exploitation. In “Boojum,” symbionts are an embodied reality of boojums’ bodies, and a platform for developing new ways of merging, and living with humans.

The symbiosis producing the organic sentient spaceship in Sheckley’s “Specialist” resembles more a group of human individuals getting together for a project to part when the project is over with the capacity of each participant to act separately and reassemble for the space flight. Rather than evolving together for a spaceflight, these species are created this way, and terrestrial humans diverge from it only because of the physical distance from the intergalactic community. “Specialist” is an original first contact parable, turning the alien abduction trope into a plea for help from aliens, where the human can connect with the alien other seamlessly, because it is what humans are intended to do. The divine intention behind the unity of the organic sentient spaceship is evident in the separate sentient organisms’ specialisations in the ship body, their functionality defining their species. For instance, “Walls” constitute the outer and inner casing and can endure the strain of a spaceflight, “Thinker” stores all information and is responsible for its processing and offering options for actions, and “Eye” feeds visual information to every organism of the ship. All of them have different body shapes, geared to their function, like multi-handed doctor, spider-like Talker or egg-yolk shaped Eye. At the same time, they originate from different planets, which makes it unclear how they managed to meet and form a sentient spaceship at all, leaving the sense of vaguely divine purpose as an explanation.

The Spline is an aquatic species who develop a space-faring capacity and a capacity for forming symbiotic relations with both organisms constantly present in their bodies, like semi-sentient drones, responsible for immunity, and their passenger species. The latter becomes their selling point in the intergalactic trade, for which they receive various benefits from contracting species and a target for humans, whose colonial project, propelled by the

conflict with the Xeelee, covers the whole Universe.<sup>44</sup> The series provides two explanations of the Spline's evolutionary path, casting relations of the Spline and humans in a different light. "Blue Shift" states: "A Million years ago [...] Spline made a strategic decision" to rebuild themselves, getting rid of articulated limbs and hardening their flesh and organs to leave the surface of their planet." (Baxter *Xeelee: Vacuum Diagrams* "Blue Shift") In "Breeding Ground" (2003), a scientist insists the Spline "lacked limbs, tools" and "there would be no need for the sort of manipulative intelligence that would enable them to redesign themselves," concluding there are some "hunters, farmers" modifying the Spline, the traces of whom, however, are not found on the Spline's home planet. (Baxter *Resplendent* 244) Finalizing the Spline's subjugation by humans, "Breeding Ground" comes from the anthropocentric premise casting species which undergo modification or selection by other species as non-agential, an object of exploitation. The fourteen-year gap between short stories allowed the ideological and conceptual framing of the series to crystallise, foregrounding the anthropocentric statement and rejecting the existence of the animal other's agency.

The anthropocentric and consumerist vision towards a similarly independently evolved species is challenged in Bear and Monette's "Boojum," which emphasizes the limitations of human control over a self-evolved spacefaring animal, and the opportunities that co-operation of different species offers. *Lavinia Whateley* (Vinnie), a boojum, is a deep-space swimmer, a species native to gas giants and resembling a "spiny lionfish," and used as spaceships by humans.<sup>45</sup> (Bear and Monette 3) Vinnie, like all boojums, is an "ecosystem unto herself" and creates a favourable environment for her crew, providing for air and water, through the processes facilitated by her symbionts. (3) Boojums' life cycle starts on gas

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<sup>44</sup> The Xeelee is an alien species, so technologically advanced that they hardly notice humans' attempts to fight them, being engrossed by the conflict with Photino Birds, a dark matter alien race, using stars as their birthing pools and thus destroying them.

<sup>45</sup> The full name of the boojum is italicised in the short story. In the Chapter the italics are preserved, also assisting in differentiating between the boojum in the short story and H.P. Lovecraft's character.

giants, continues in solar systems, and urges them to go to deep space; going to deep space conflicts with human goals, so humans install a module, called a governor, on boojums' neural nexus. (13) Vinnie's module is removed by Black Alice when the pirates, owning Vinnie, are attacked by the Mi-Go, an alien fungi species. The pirates steal an illegal shipment of preserved human brains, belonging to the Mi-Go; the Mi-Go catch up with Vinnie, get back the cargo, increasing their store of "brain[s] in a jar" by extracting the crew's brains. (15) At the time of the attack, Black Alice is making repairs on the boojum's outer skin and notices the inflammation caused by the module; after learning the module's functions, she sets Vinnie free. Reciprocating Black Alice's sympathy and compassion, Vinnie offers to eat Black Alice, to save her from the Mi-Go, and Black Alice agrees. While Black Alice's body is consumed by Vinnie, her consciousness becomes a part of the boojum, both refocusing the attention on symbiosis and challenging the anthropocentric paradigm. The decisions on where to go are defined by Vinnie, while Black Alice is taken along for a ride, relinquishing control and embracing being a part of a more-than-human collective.

Symbiotic interactions happening within the bodies of the organic sentient spaceship are grounded in the materiality of the body, in chemical and genetic exchanges, and in the physical proximity of the participants. The exchanges blur the boundaries of the body/mind and the inside/outside, shifting the idea of individual subjectivity and replacing it with a posthuman subjectivity, rejecting the anthropocentric premise. Gilbert, Sapp, and Tauber, contemplating the implications of multiple symbiotic relations existing within bodies of animals, note: [A]nimals can no longer be considered individuals in any sense of classical biology [...]. Our bodies must be understood as holobionts whose anatomical, physiological, immunological, and developmental functions evolved in shared relationships of different species. (334) In "Specialist", a composite entity with distributed agency, questions the body/mind dichotomy, but each part of the ship remains an individual capable of existing outside the conglomerate of the organic sentient spaceship. The Spline carrying their

passengers inside their organs, bringing alien environments and species into their bodies show the porosity of the inside/outside boundary, their symbionts, like “semi-sentient” antibody drones, possess a lot of autonomous function remaining alive for some time after the Spline’s death, probing into the question of individual. (Baxter *Timelike Infinity* Chapter 12) Vinnie’s eating Black Alice, which results in physical and mental merging, is a radical challenge both to the body/mind and the inside/outside boundaries, as well as the boundaries of self.

In “Specialist,” the alien spaceship is “a riot of colours”, a living mishmash solidly grounded in organic associations, contrasting it to the prevalence of mechanical components and sterile environments, and hidden – possibly gruesome – organics in the human-machine sentient spaceship. (Sheckley 79) The living matter of the alien sentient spaceship is favoured over the metal and artificial in machines produced by the human civilization, which the short story sees as divergent. Only through the organic bodies, a unity embracing not only the body, but also the mind can arise in “Co-operation,” a mode of shared cognition that the organisms of the sentient spaceship use when travelling through space. (Sheckley 83) In the Co-operation, all the organisms of the spaceship share their emotions, thoughts, and intentions, dissolving the body/mind boundary, and putting under scrutiny the preference for the durable non-living matter over the living.

In the Xeelee Sequence, the Spline’s body is as pointedly organic as the body of the alien sentient spaceship in “Specialist,” even more so, and the detailed accounts of the inside of the Spline’s body and human’s reaction to it expose the rejection of materiality, rather than a celebration of it. The organic, slimy insides of the Spline’s body mark the otherness of the nonhuman animal/alien’s body, simultaneously hinting at the discomfort caused by the organicity of the human body, its animal origins, which the series attempts to overcome through multiple examples of transcendent disembodiment, revealing transhumanist orientation. Michael Poole, the protagonist of several novels in the series, turns into

“quantum wave functions,” an omnipresent, timeless entity in *Timelike Infinity*, and creates Jophiel, a self-aware “Virtual,” a disembodied copy of a human mind in *Xeelee: Redemption*. (Baxter *Timelike Infinity* Chapter 2, Chapter 16; *Xeelee Redemption* 1.1) The impulse to escape the materiality of the body works not only on the human body. The human visitors to the Spline contracted to the Qax imagine “[t]iled vein-corridors, metal-walled stomach chambers” instead of all muscly, veiny and sticky environments, eager to hide the body reality under the sanitised surfaces and unambiguously perceiving the technological intervention into the body of the animal other as their right and privilege.<sup>46</sup> (Baxter *Timelike Infinity* Chapter 12) It also exposes the that the nonhuman animal is perceived as a commodity, an object that can be changed, refitted; its bodily structure and appearance are mere characteristics and parameters to be adjusted to the humans’ tastes, exposing the anthropocentric presumptions of the series.

The process of eating and being eaten in “Boojum” celebrates the belonging to the flesh of the world with all the nonhuman embodied agents, vigorously rejecting the visions of transcendence of materiality. Black Alice prefers to be eaten and digested by her beloved spaceship to becoming “a brain in a jar,” which mocks the transhumanist dreams, centred on various techniques of brain preservation. (Bear and Monette 15) Digesting Black Alice’s body, Vinnie manages to retain the human’s consciousness, confusing the boundaries between the bodies and minds, the human and the animal, life and death. Black Alice survives as a part of the boojum through the material process of eating and regains her consciousness as an integrated body part. Black Alice’s experience challenges not only abstract dichotomic boundaries of the body/mind, the self, the inside/outside, it accentuates the permeability of the boundaries of the body itself, echoing Dorion Sagan and Lynn

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<sup>46</sup> The Qax is the second species after Squeem (fish-like brain parasites-turned-symbionts) to colonise the Earth, their organisms consist of huge convection cells with distributed cognition, and they cannot survive without the turbulent oceanic flows of their home planet, so they hire the Spline and take a part of their home planet during space travelling.



Margulis's contemplation of the body in "The Uncut Self": "the body, the material or corporeal basis for "self," has no absolute time-independent skin-encapsulated topological fixity." (23) The human, eaten by boojum, is incorporated into a bigger ecosystem without strictly defined boundaries and hierarchies, becoming a part of the flow of matter, a trans-corporeal unity with the nonhuman animal.

The elements of the abject brought forth by the naturalistic description of organic bodies are forceful reminders of the boundary between the human and the nonhuman animal, and gain significance in the works, concerned with drawing and policing this boundary. Kristeva theorizes abjection as a boundary-making means dividing the culture and "the threatening world of animals or animalism, which were imagined as representatives of sex and murder." (13) The elements of the abject are absent in "Specialist," focusing on the idea of the cooperation of the sentient species, and accentuated in the Xeelee Sequence, where this boundary becomes an exoneration from exploiting a sentient species. The abject makes its appearance in "Boojum," but it is not the focus of the story, rethinking and reimagining interspecies relations.

The Spline's bodies do not contain special organs or areas for transportation of other species, for instance, humans travel inside the Spline's eye or in its stomach in a constant contact with the organic surfaces and fluids of the nonhuman animal and alien anatomy, making it impossible to avoid the abject in "fleshy passages" with "bulging veins," bubbles of liquid functioning like blood. (Chapter 3) At the same time, the body of the Spline is unambiguously sexualised by focal characters, describing the orifices in the Spline's body as "obscene," "welcoming," comparing the passage through its body with "being born" and the penetration of the Spline's body by the human ship to rape with "a vast, obscene, soundless explosion" in the end. (Chapter 3, Chapter 11) The combination of the abject details and sexualisation of the Spline establishes them as the ultimate other, the alien and the nonhuman animal in the same physical and naturalistically described body. The hierarchy

created by this boundary between the human and nonhuman serves as a justification for exploiting and subjugating the other. The Spline's bodies, perceived as gross by humans, become a site of power where humans exercise their control over the nonhuman animal/alien other that needs to be changed and adjusted for human use, and a site of forgetting where humans are allowed to ignore both their exploitation of a sentient living being and their own organic origins.

Like travelling in the Spline, travelling in boojums involves a direct contact with the nonhuman animal's internal body tissues, however, Bear and Monette, while mentioning abject substances, objects, and processes, do not emphasize the abject in the encounter of the human and nonhuman, attempting to mend the break between them rather than to draw a clear boundary. In contrast to the negatively-connotated descriptors like "obscene," used for the Spline, boojum's tissue is described as "smooth, velvet slickness." (Bear and Monette 9) Likewise, the potentially abject dark moist places inside Vinnie's body and process of her feeding, when she consumes Black Alice's vomit, other human waste, and captured ships with all their contents, invoking the abject, do not generate aversion in Black Alice. On the contrary, the human body becomes a part of material exchange, a part of the flow of matter, dissolving the boundary between the human and nonhuman. Black Alice is delighted, grateful, and very affectionate to Vinnie, waving at her, talking to her, and touching her. The abject in the body fluids and death can be traced to the "impossible within," testifying to the inherent affinity of the abject and the subject – a part of the self that is rejected. (Kristeva 5) The impossible of the boojum's body encounters the impossible of the human body and assimilates it, "disturb[ing] identity, system, order." (4) The ultimate disturbance of identity, system, and order, arrives in Vinnie's consuming Black Alice, but this disturbance, a merging of the human and nonhuman with undertones of horror, establishes a new subjectivity, a new way of being together with the other.

An independent evolutionary path of the organic sentient spaceship implies their agential potential and invites consideration of the co-operative approach to interspecies relations and the challenge to the exploitative patterns in the human actions towards them, both of which are actualised in “Specialist” and “Boojum.” The addition of doubt in the evolutionary origin of the Spline later in the series is an attempt to excuse the hierarchical presumption, allowing humans to ruthlessly exploit the nonhuman animal, and living up to the worst manifestations of anthropocentrism. The symbiotic relations between different species comprising the bodies of the organic sentient spaceship are an invitation to reconsider hierarchical, competitive ideas of interspecies relations, and to join a co-operative, coevolutionary collective of different species, making the dichotomic boundaries porous through the symbiotic exchanges, played out in “Specialist” and “Boojum.” Commodification of symbiotic relations is the initial premise of the human-animal relations in “Boojum,” which leads to exploitative practices, but the capitalist greed for profit is punished through the plot of the short story, and the survivors of the resulting conflict abandon the previous patterns of interaction. In the Xeelee Sequence, symbiosis becomes a product to be sold or extorted, failing to live up to the potential of countering capitalist systems, and becoming their part.<sup>47</sup> The abject elements in the bodies of the organic sentient spaceship continue the discussion of the dichotomic boundaries between the human and nonhuman, the attitude to which defines the possibility of shifting the views towards the other. While the Xeelee Sequence uses the abject to reinforce the boundary between the self and the other, “Boojum” recognizes its existence, but also sees it as an opportunity to rethink the relations between the human and the other.

## **1.2 Tailor-Made species**

The organic sentient spaceships in *Lexx*, *Farscape*, and the Binti novella series do not evolve independently, but are designed by other species, their origin immediately

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<sup>47</sup> Exploitation and subjugation of the nonhuman animal is discussed further in Chapter Five.

bringing close attention to the born/manufactured dichotomy and condemning them to subjugation by the implied hierarchies of the dichotomy. Their bodies, modified by humans/humanoids are a living proof of the control the other species exercises over them, a combination of materials in a purpose-oriented design, activating the issues of animal experimentation and exploitation of the nonhuman animal, which are discussed further in Chapter Five. The consideration of the materials used in the design hint at the development of the human-animal relations, either corresponding to the patterns of exploitation or questioning them.

The Lexx is the titular alien organic-mechanical sentient spaceship in *Lexx*, a four-season space opera TV series, and the “most powerful weapon of destruction in the two universes,” commissioned by His Divine Shadow, a head of the Divine Order, a religious cult, seeking to conquer these two universes. (“Eating pattern,” 0:13) The Lexx is shaped as a giant dragonfly with an inflexible tail, revealing the insect origin of its organic source, which originates from a self-evolved insect alien species that humans defeat and use as a source material to design their insect spaceships.<sup>48</sup> However, the Lexx’s design is a result of a complicated entanglement of agencies of human designers and His Divine Shadow, the last survivor of the Insect Civilization and the founder of the Divine Order. (“I Worship His Shadow” 05:57) His Divine Shadow’s Bio-Vizier bioengineers the ship, intended to become the doomsday weapon for humanity.<sup>49</sup> The human-insect conflict is a recurrent SF trope based on, as Larissa Budde explains in “Back On The Menu: Humans, Insectoid Aliens, and the Creation Of Ecophobia in Science Fiction,” the “ultimate” otherness of the insect,

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<sup>48</sup> The first sentient alien insectoid ship appears in *Angel Station* by Walter Jon Williams, published in 1989. It is an independently evolved species, who largely repeat the destiny of the Spline, initially trading with humans and eventually enslaved by them. *Angel Station* ends at the beginning of the subjugation process when humans figure out how to influence the insect species with music. The use of musical rhythms allows humans to impose their will on the insect species.

<sup>49</sup> The rigid hierarchical structure of the Divine Order, its conflation of state and religious institutions, as well as the title “Bio-Vizier” reveals a heavy influence of stereotypical images of Muslim countries on its concept development. The insect origin of the Divine Order in the show and its explicit tyranny testifies to a deep prejudice and xenophobia imbedded in the TV series.

causing “abjection and downright negation.” (125) In the analysis, bringing together SF film through the *Alien*-saga and SF television with *Stargate Atlantis*, she explains: “The insect-heritage of the aliens [...] exemplifies and justifies their moral destitution and inhumanity.” (126) William M. Tsutsui notes in “Looking Straight at THEM: Understanding the Big Bug Movies of the 1950s” that the insect enemy is a frequent occurrence in the SF cinematic narratives, especially in “Hollywood postwar sci-fi boom.” (237) Relying on the SF megatext, *Lexx*’s creators employ the concept of the insect as the ultimate other almost unquestioningly, providing little challenge to the divide, alienation, and hierarchies that it entails in the relations between the Lexx and his crew.<sup>50</sup> The functionality of the mechanical components in the Lexx’s mostly organic body – communication, control over the whole ship and weapons – is oriented towards the organic sentient spaceship’s interaction with its human designers, casting these modifications as a means of reasserting control over the alien/insect other, which is further discussed in Chapter Five.

The Leviathans are bio-mechanoid sentient spaceships in *Farscape*, a species created by the Builders, a godlike alien race; the Builders’ claim to have given Leviathans a “soul” problematises the Leviathan’s origin and activates a theological implication of the divine will in the creation of all species. (“Look at the Princess – I think, I do” 8:43-8:48) The Leviathans’ obedience to their creators also resembles a religious action; in “Look at The Princess,” Moya, the sentient spaceship with which the crew travels throughout the series, answers the Builders’ call. The Builders conceive the Leviathans with a peaceful intent, which is violated by the Peacekeepers who capture Moya and tamper with her reproductive system to produce a Leviathan-gunship hybrid. After the Peacekeepers’ modifications, Moya can birth gunships, and the Builders consider decommissioning her, but eventually settle on

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<sup>50</sup> The only person who shows respect towards the Lexx is Kai, the last of humans who developed the insect spaceships; Kai feels a connection with the Lexx as a former pilot of a similar spacecraft – an insect one-seater – and as a former weapon of the Divine Shadow. Thus, Kai, an undead assassin, lacking motivations and emotions, is closer to the Lexx, sharing some of the Lexx’s otherness, while the fully human captain of the Lexx rarely pays attention to the Lexx’s needs, like food and reproduction, let alone emotions.

entrusting Moya to the crew's responsibility. The hierarchical nature of the relations between the Builders and Leviathans is evident in the Builders' power to decide on the Leviathans' life and death and give the control over the nonhuman animal to the designated select group, assigning them as caregivers.<sup>51</sup>

Compared to the Lexx and the Leviathans, the design story of the Miri-12, the sentient spaceships from Okorafor's *Binti* novella series, is straightforward; the Miri-12 is a genetically engineered living spaceship species, "closely related to a shrimp," positing them as a product of bioengineering with the use of the genetic material of a terrestrial origin. (Okorafor *Binti* 8) The genetic material used in the design of the Miri-12 includes not only animal, but also plant and bacterial sources, all of which create an environment both for the living spaceship and passengers. Plants growing in the breathing chambers produce oxygen and absorb poisonous substances; plant biome is enhanced by bacterial life, which most actively spreads and procreates when the ship is very young. Fully terrestrial sources and technology involved in the design of the Miri-12 cast a certain set of presumptions related to the Miri-12 as a species: they seem to be lacking in agency, and sentience; a piece of technology, a tool, rather than a living being. Reflecting this, *Binti*, the protagonist of the series, describes the Third Fish in a fascinated but rather objectifying tone, coming on board of a Miri-12 spaceship for the first time: "The ship was a magnificent piece of living technology." (8) But the connection between *Binti* and Third Fish, the ship transporting her to Oomza University strengthens and eventually in *Binti: The Night Masquerade* (2018), she says: "[Miri12s] are probably the finest technology, finest *creature*, this planet has ever

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<sup>51</sup> Joan C. Tronto in *Moral Boundaries: A Political Argument for An Ethic of Care* defines care as "both a practice and a disposition" that "involve[s] taking the concerns and needs of the other as the basis for action." (104, 105) Tronto also recognises the complexity of relations of care, reflected in the social attitudes both to the caregiver and care-receiver. While the role of caregiver is often associated with "the lowest ranks of society: [...] women, the working class, an in most of the West, by people of colour," the role of care-receiver implies less autonomy, less power, and less capacity, cast as a pitiful position of 'neediness.'" (113, 120) This creates a multifaceted image of care, where a lower hierarchical position assigned to all participants of care.

Reproduction and the implications of non-violence in the Leviathans' design are discussed later in the Chapter. Chapter Five considers hierarchical relations between the Leviathans, their creators, and crews.

produced.” (239, emphasis original) The second characterisation decreases the human participation in the Miri-12 production, making them creatures of the Earth, rather than humanity, and presenting them as sentient and responsive to other agents.

The intentional design behind bioengineered sentient spaceships posits the presence of directing agency in the combination of species and matter within the bodies of the spaceships; exerting a power over different species and matter, it establishes hierarchies, but also opens ways of challenging them, going beyond the framework of the design, and finding other ways of being in a collective of species. The presence of this agency is obvious in Moya, with a peaceful intent programmed into her by the Builders, and in the Lexx’s drive for destruction, resulting from the designer’s desire to create a weapon. However, this underlying intent does not fully define the actions of the tailor-made sentient spaceships, they remain cooperative collectives of species with distributed agencies, where no single agent has a hegemonic position over others. Bruno Latour in *Politics of Nature: How to Bring the Sciences into Democracy* considers “collective” as a “melting pot” of human and nonhuman “actants who are defined by lists of actions that are never complete.” (7, 80) The openness presupposed by this characterisation is evident in the Miri-12s’ capacity to form connections with other species that are not necessarily intended by the human creators. A cooperative collective, creating an eco-system of its own also challenges the boundaries of self, revealing the body as porous, with the constant exchange of matter in the organic sentient spaceships’ bodies.

The symbiotic collective of the Lexx, consisting of the organic, including moth shuttles for short distance flight and for planetary transport, and the mechanical, is a site of multiple transformations of matter, but the attitude to matter coming through these transformations leans more to the humanist idea of the control than the celebration of radical materiality of the bodies. Like Vinnie in “Boojum,” the Lexx actively transforms matter coming from different sources, including all sorts of waste, into a desirable product, like

food for the crew, which echoes Barad's monistic idea of intra-actions. Barad writes on "intra-activity": "The world is a dynamic process of intra-activity in the ongoing reconfiguring of locally determinate causal structures with determinate boundaries, properties, meanings, and patterns of marks on bodies." ("Posthumanist Performativity" 817)

The body of the organic sentient spaceship houses numerous intra-actions feeding the crew according to their preferences, producing water, air, and gravity, where matter temporarily obtains boundaries, however, it also takes the monistic premise to a simplistic and radical absolute, where the chemical and biological limits are easily overcome by the designer's volition.<sup>52</sup> The transformations on the *Lexx* do not pose matter as agential and "vibrant." The matter in *Lexx* exemplifies the "tendency to frame stuff or things as 'inanimate object' that merely form the context for *our* action – in other words, to consider this in ways that reserve the active, creative power for humans," a premise actively opposed by new materialist feminist critique. (Bennett "Vibrant Matter" 448) The matter in *Lexx* is processed, consumed, and recycled, it is malleable and passive, lacking agency and subjugated to human's needs, which highlights the human-centred hierarchy, seeing the matter and the nonhuman animal as means to provide for the human crew's comfort. In addition to a pronouncedly anthropocentric portrayal, the passivity of matter implies the disposability of the physical body and mind's control over it, reinstating the boundary between the matter and the spirit, the body and the mind in a transhumanist manner.<sup>53</sup>

The Leviathans' bodies resemble in shape a sea animal, hinting at the origin of their organic material, but are covered in metal plating both outside and in most areas commonly used by passengers; the same combination of the organic and mechanical pertain to her

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<sup>52</sup> The food producing faculty is a rare feature in the organic sentient spaceships, invoking the connection with social insects like bees and termites consuming the food digested by other members of a colony.

<sup>53</sup> The conceptual retention of the strict boundary between the mind and body is reflected in the collection of preserved brains from previous bodies of His Divine Shadow stored on the *Lexx*, which possess memories and personalities of the previous human bodies housing His Divine Shadow, and function as the council advising his current vessel. The transfer of His Divine Shadow accentuates the body/mind boundary, being carried out by the insect essence, the soul of the last survivor of the insect civilization.



symbionts, with mechanical bug-like diagnostic repair drones (DRDs) and organic pilots, connected directly to the fleshy parts of the spacefaring animal. DRDs maintain the Leviathans' health and assist the crew when necessary. Like antibody drones in the *Spline*, DRDs' constitute a part of Moya's immune system, having some automatic response and routine tasks, as well as taking direct commands from Leviathans and their pilots. Pilots are a highly intelligent species capable of multitasking, responsible for navigation, monitoring the Leviathans' state and ensuring the communication of the spaceships with their crew. Pilots are immobile species, whose nutrients are fully supplied through a material organic connection with a Leviathan, severing of which causes a pilot's death. Moya experiences the separation from her original pilot in the Peacekeepers' captivity because the Leviathan voices her protest through her first pilot, resisting the limitation of her freedom. Exercising their power and oppressing Moya's free spirit, Peacekeepers replace the uncooperative pilot by a young pilot, cheated by the Peacekeepers by the promise "to see the stars."<sup>54</sup> ("The Way We Weren't" 41:23-41:28) The artificially-induced connection between Moya and the new pilot causes moral and physical suffering to both Moya and the new Pilot, but allows Peacekeepers to use her as a test subject and prison transport. This interference with naturally formed ties between the nonhuman animal and alien by an anthropomorphic agent dramatizes the anthropocentric approach, where the human is attributed the higher value and other species become instruments in achieving human goals.

The Binti novella series is keenly interested in the complexity of the connections between different species, with Binti making physical connections with the Meduse, alien species, and New Fish, Third Fish's daughter; the body in the series is a symbiotic collective open for new, unexpected symbiotic links. The *Miri-12*, initially encompassing a diversity of species, is a part of the exploration of inter-species connectivity, forming a symbiotic

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<sup>54</sup> Pilots, merging with the Leviathans, are usually experienced and old, their symbiotic connection approved by their council.

connection with the human, incorporating Binti into the collective of species, agencies, entangled into a complicated knot in their bodies. The merger is a result of Binti's resurrection in New Fish's breathing chamber, where the actively developing bacterial life blends in Binti's genome and reassembles Binti's body after a fatal shot. (Okorafor *Binti* 322) New Fish defines Binti's body after the resurrection as "*more microbes than human,*" firmly rooting Binti in an open multi-species entity. (322, emphasis original) Likewise, New Fish's body has traces of the merger, giving her a capacity to visualise her verbal communication within her body. This mutual influence dramatizes trans-corporeality, in which, as Alaimo elaborates in *Bodily Natures: Science, Environment, and the Material Self* "the human is always inter-meshed with the more-than-human world," and which "acknowledges the often unpredictable and unwanted actions of human bodies, nonhuman creatures, ecological systems, chemical agents, and other actors." (2) New Fish's and Binti's bodies in their new connection reveal new sides and influences, to which all participating agents contribute. The human/spacefaring animal combination speculatively represents the body as a multispecies entity rather than a monolithic subject, blurring the boundaries between the self and the other, the inside and the outside, representing the body as a porous entity, a part of constant flows of matter.

As the organic component prevails in the bodies of the bioengineered organic sentient spaceships, the abject also makes its appearance in them, but the process of design gives an opportunity to exercise the power to hide the abject bodies of the nonhuman animals under the cover of mechanical sterility from the very start of conceptual design, which human characters sorely miss in the Xeelee Sequence, looking at the insides of the Spline's bodies. The hidden organic parts also echo the bodies of shell-people, hidden from their partners and passengers in the titanium column, drawing a parallel between the disabled body and the nonhuman animal, exposing another aspect of dehumanisation of disability in the Brainship

series.<sup>55</sup> In *Farscape*, Moya's design follows this pattern, with her organic, living parts located away from the living quarters; in contrast, *Lexx* accentuates the abject in the organic sentient spaceship, both due to its insect origin and general contempt to flesh, as opposed to pure disembodied existence. Setting the Binti Series aside is the absence of abjection, even though a potential for it exists in the gory images of Binti's death and earthy smells and humidity of New Fish's body. The abject elements are present both in the human and in the nonhuman animal; "the impossible" is recognized in both bodies, which allows for bonding rather than drawing boundaries and policing them.

The abject and monstrous in the Lexx's eating habits and appearance accentuates the nonhuman in the organic sentient spaceship and reiterates the adolescent fixation on the bodily matters, intertwined with a subtle contempt to organicity. Budde argues that "[t]hrough abject depiction of processes like feeding and reproduction, both of which symbolize an elemental openness of the body, the insects and those who bear their mark are excluded from personhood and selfhood." (126) Fed with the dead bodies of those who the Divine Order considers criminals, the Lexx is but a part of the Divine Order's penalisation system: prompted by his programming and bio-engineered properties, he does not have proper personhood, obediently eating and following orders of His Divine Shadow. The scene of feeding the Lexx with rows of freshly cut and packaged human bodies bears a visual resemblance to the shift change scene in Fritz Lang's *Metropolis*. ("I Worship His Shadow" 28:14, "Eating Pattern" 1:56, "Gigashadow" 0:59) The visual metaphor of the factory, the machine, as a pagan deity consuming the human sacrifices, is literalised in the TV series with a monstrous insect eating bodies of humans marginalised and criminalised by the Divine Order. Hijacked from the Divine Order by his new crew and freed from the programme to obey His Divine Shadow, the Lexx proves to be able to eat any organic substance, including the soil on the garbage planet Klaagia, his food source remaining in the

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<sup>55</sup> The issue of disability is discussed in Chapter Five.

realm of the abject. (“Eating Pattern” 16:12-16:16) The Lexx’s interior design is heavy with abject elements: bonelike partitions and supporting structures, and chitinous covers are accompanied by phallic shapes of the showers, food dispensers and steer sticks in the moths, unevenly covered with hair-like chaetae and squirting out liquids. The shape of the food dispensers, the consistency of the food and the method of food production sustains the association with the abject, further enhanced by the source of all the water and food on the Lexx – recycled human and insect waste. The omnivorous, but mostly garbage-eating, the Lexx provides energy, water, and subsistence to its crew, easily overcoming chemical and biological limits, and incorporating their bodies in its abject consumption cycle, which does not transform the underlying hierarchical relations between the matter and the spirit, the body and the mind, making the former a source of scatological humour, rather than a site of significance and mattering.

Moya’s body design reveals a measured mix of inherent liveliness and artificiality in her appearance, especially her living quarters and bridge, the areas primarily intended for passengers, where metal surfaces of walls and doors take on smooth organic shapes. Contrastingly, the areas of Moya’s body that are infrequently visited by anthropomorphic species are mostly organic, with visuals associated with wetness and sliminess, the dead sterility of the mechanical design giving way to the unruly and messy life processes of an organic being. This carefully concealed presence of the organicity reveals a tint of uneasy liminality, underlying blurring of the boundary of the nature/culture divide, celebrated otherwise in Moya’s body. Moya, her symbionts, and her crew all are a part of the cooperative collective with distributed agency, where multiple transformations of matter take place, revealed in the gene flows and matter exchanges happening between them. Her body is a porous, open entity, challenging the boundaries of the born and manufactured, flesh and metal, self and the other, but still features the divide and clear allocation of spaces, exposing

the control the creator exercises over it for the sake of humans' comfort and contrasting it to the too living and abject body of the Spline and the Lexx.

The evolutionary path that the organic sentient spaceships take seems to make a clear distinction between the born and the manufactured, but the discussed examples challenge this boundary perpetually, and the difference in the underlying presumptions of hierarchies and agency of the nonhuman animal lies in the ideological orientation of the works. The anthropocentric orientation of the series, like the Xeelee Sequence and *Lexx* predetermines the treatment of the nonhuman animal as a subjugated other, a tool, with their bodies as a site of exercising control, regardless of whether the species has evolved independently of humans or is designed by them. The works questioning the centrality of the human give space for the exploration of the symbiosis, and material exchanges and intra-actions, countering the solidity of the traditional dichotomic boundaries, again paying little attention to the neat distinction of the presumed human control over the designed species. The elements of the abject, the focus on which functions as a boundary-making practice, serve to accentuate the otherness of the nonhuman animal. In contrast, the recognition of the presence of the abject in all bodies reveals the porosity of this boundary and openness of all bodies. "Specialist" stands alone in this respect, as it does not present the aliens comprising the organic sentient spaceship as nonhuman animals, it shows them all as equal participants of a cooperative venture; but rather than disregarding hierarchical presumptions towards otherness of the nonhuman, it eliminates the element of nonhuman from the aliens, retaining anthropocentric focus.

## **2. Biological Sex and Social Gender**

The bodies of organic sentient spaceships have indicators that explicitly or implicitly show their biological sex, be it male, female, intersex, or hermaphrodite, the variety of which is wider than the gender binary that does not fully describe their subjective experience, however, most often seen through the eyes of human focal characters, they either belong to

this paradigm or are excluded from it. The reasoning and intention behind gendering the alien or the nonhuman animal is akin to the gendering of the human-machine sentient spaceship, even though the question here does not concern the category of humanness, in contrast to Chapter One. Placing the alien/nonhuman animal within the gender binary indicates the acceptance of agency in the other, and possibility for shifting the hierarchical relations, nevertheless it reduces the potential complexity of their biology and inserts them into the human narrative, making gendering an exercise of power. The neutral pronoun for alien or the nonhuman animals distances them from humans, emphasises their incomprehensibility and otherness and shows how their gender is unimportant, solidifying the hierarchical relations between the human and the nonhuman animal, where the latter is the tool whose subjectivity can be ignored.

Gendering based on the implicit knowledge of the alien or nonhuman animal anatomy or plot elements, like reproduction, tends to imply gender-associated patterns, either replicating the gender patterns of the time of writing or attempting to question them. For instance, gendering all aliens as male in “Specialist” follows the time-specific perception of gender, while gendering Moya, Vinnie, Third Fish, and New Fish as female provides a ground for interrogation of the ideas of care and nurture associated with femininity. Tronto explains this association by “retreat[ing] to the traditional gendered division,” which render women as “more emotional than men” and, thus, “more caring.” (119) Another association under scrutiny is the association of the nature and femininity, which Haraway criticises with her famous statement: “I would rather be a cyborg than a goddess” (*Reader* 46). Hence, while gendering indicates higher chances to meaningfully challenge the anthropocentric vision of nonhuman species, it also does not necessarily mean subversion of gender stereotypes.

## 2.1 Gendered Organic Sentient Spaceship

Among the selected works, unambiguous gendering of the aliens or nonhuman animals is more widespread than non-gendering or ambiguous gendering, and it corresponds with the perception of the alien or nonhuman animal as generally agential and deserving of respect. Gendering of all aliens comprising the ship as male in “Specialist” gives away the human’s attitude to them as equally sentient species and enhances the urge for cooperation. In *Farscape*, Moya is eventually recognized as a member of the crew, and her preferences become as important as those of any other member, which is supported by initial recognition of her as a gendered being. In “Boojum,” the relations between the protagonist and the nonhuman animal are based on appreciation and mutual help, and gendering becomes one of the places of finding affinity, while appreciating the difference. In the Binti novella series, the function of gendering resembles that in “Boojum,” both works having women of colour as protagonists.

The organic sentient spaceship in “Specialist” consists of exclusively male representatives of different species, and it is the only work where aliens choose to identify as male. The focal character of the short story is an alien – Talker, genders himself and other parts of the ship. The human – “Pusher” – also immediately recognizes them as males, referring to them as “boys” and “lads,” immediately establishing a relationship of companionship and equality. (Sheckley 80) Though eliminating the hierarchy from the encounter of different species, practically it sustains the anthropocentric paradigm. Earth is seen by the aliens as a planet of “primitive Pushers,” suggesting that all life there developed to produce this single species. (Sheckley 75) The urge for cooperation is thus intended for humans, who – even though different in shape and colour – are still a community of men, united by their valiant task of traversing the swathes of space.

The Leviathans seem to have two biological sexes, both of which are represented in *Farscape* with Moya and her son Talyn, and gendering follows the pattern of conflating the

biological sex and social gender. Moya is a female Leviathan. She can bear offspring; her reproductive capacity is considered further in the chapter. Though it is unclear how much of it hinges on the intention of the Builders, their active participation in the Leviathans' lives and their god-like influence implies functioning patriarchal schemes and stereotypes. The care and nurture that the passengers get from the Leviathan, providing them not only with a living space, but also with air, water, and gravity, fits the stereotypes of femininity in patriarchal societies, where the care for children, and elderly is considered a woman's task. At the same time, gendering Moya, despite her clear nonhuman essence, supports the development of her relations with the crew, which consistently increases the crew's recognition of Moya's agency. Moya's gender becomes simultaneously a trace of power exercised by her creators – a preconditioned behavioural paradigm, and a sign of inclusion into the category of agential beings.

Vinnie's gendering is seen from her name *Lavinia Whateley*, given to her by her human crew, which, as well as the shortened version, displays the hierarchical basis of humans' attitude and brings in intertextual connections that can be traced to Ovid, Shakespeare, and H.P. Lovecraft. Lovecraft's eponymous character from "The Dunwich Horror" (1928) provides significant comparison parallels, putting forward gender presumptions and drawing parallels between the gendered other and the animal other of the humanist ideal. Lavinia, impregnated by a monstrous entity summoned by her father, gives birth to twins – a human shaped son and an invisible monster. Her body is not fully under her control, the impregnation happening not of her free will; Vinnie is similarly subject to the patriarchal patterns of control, with her movement determined by the crew. Lavinia is most likely murdered by her human-shaped son, while the human crew tortures Vinnie through the governor, causing inflammation and pain. Contrasting to Lavinia, a human raped and haunted by a monster, Vinnie is monstrous herself, with her predatory face, crystal sharp teeth and indiscriminate eating habits. (Bear and Monette 5) Lavinia becomes a victim of



her child, while humans always fear being consumed by the animal they tamed. The similarities cast Vinnie as a victim of human cruelty, while the reversals reveal the rejection of her subjugated position and reclamation of her agency. Vinnie's name and gender are thus both an exposure of the control humans exert over her and a subversion of the exploitative patterns, arising out of the presumption of inferiority of otherness.

Resonating both with *Farscape* and "Boojum," in the Binti novella series, both Miri-12 spaceships – Third Fish and New Fish – are female, and gendering indicates the acceptance of the nonhuman animal as agential and paves the way for forming the connection with humans. Emphasizing it, Binti uses a gendered pronoun, describing the spaceship to her friend Mwinyi: "I left on a ship called Third Fish. It was... *she* was alive." (Okorafor *Binti* 239, emphasis original) Though Third Fish is generally referred to with a feminine pronoun, the emphasis shows the importance of the pronoun, resisting the hierarchical presumptions of "it." Binti sees Third Fish as a person and an agential being and treats her with respect, trying to impart it to Mwinyi, who has not yet encountered any Miri-12 spaceships. As the correlation between biological sexes of Miri-12 and human gendering is unclear, with only female spaceships present in the novellas, gendering with a feminine pronoun mainly accentuates the inapplicability of "it," bringing forth the connection of neutral pronoun and a derisive attitude.

Gendering the alien or nonhuman animal imposes social expectations of gender and invokes the stereotypes pertaining to a certain gendering pattern. In "Specialist," gendering as male showcases all the privilege given to a man in SF of the time, and gendering of Moya, Vinnie, and both Miri-12s as females elicits associations with a caring and nurturing behaviour, corresponding to patriarchal stereotypes. In their respective plotlines, these associations play out in different forms, with Moya mainly following Western paradigm, Vinnie subverting it, and the Binti novella series looking at gender outside of the Western paradigm.

Even though, as Rob Latham notes, “1950s SF prefigured the New Wave’s heightened attention to issues of gender and sexuality,” “Specialist” falls into a more traditional pattern of gendered portrayals in SF: there are no female characters and women are mentioned only in connection with men’s entertainment, not differing much from “Solar Plexus” in this respect. (Latham par 18) The all-male aliens comprising the spaceship tellingly capture a male human to join their team, reflecting gender politics of the mid-twentieth century US, with its restrictive gender norms. Women in “Specialist” do not participate in adventurous endeavours like space travelling, cannot be in a secluded place where a human is captured by the alien spaceship, they are remembered only as a cure for loneliness and are expected to wait for their men in the safety of home. The same is applicable to aliens, as Talker, the focal alien character, only reiterates this stereotype remembering his family on his home planet. (Sheckley 81) Like in “Solar Plexus,” where the only trace of femininity appears in the 1952 version in the spaceship disconnected from Bennett’s brain, femininity appears in the background, a passing moment of recognition that women do exist, but not in open space.

*Farscape* actively engages with gender patterns and stereotypes, challenging both reduction to biological functions, and heteronormative stereotypes through Moya and her crew of escapees, though the challenge is neither evenly sustained through all the season nor equally distributed between humans and nonhumans. In “‘You Can Be More’: *Farscape*, Melodrama and Space Opera Revisited,” Carlen Lavigne, though recognising their limitations, praises early seasons for a wide spectrum of possibilities for performing femininity and masculinity, and for not shying away from discussing female sexuality, including the sexuality of an aging female body. She, however, criticizes the return to a conservative gender pattern in the last season and especially in *The Peacekeeper Wars*, where almost all female characters take their expected positions of mothers and wives. (85) Moya is seen as a motherly figure from the very beginning of the TV series, willing to protect her

offspring and give care both to him and to her crew, which is supported by the view of the crew, voiced in “Through the Looking Glass”: “Moya has been [...] our protector, our home, our companion and friend” (0:55-1:04). This attitude is a positive contrast to the Peacekeepers’ exploitative and reductionist vision of the nonhuman animal other, looking at Moya as a fertile female specimen suitable for their experiments, ignoring her agency and perceiving her only as a reproduction machine. It still fits into the traditional pattern of femininity, but also serves as a ground for forming relations of trust and respect with the crew, leading to recognizing the nonhuman animal’s agency and forming solid cooperative relations, which will be discussed later in the chapter.

“Boojum” successfully disentangles the care and nurture from femininity, showing different patterns of behaviour in women on board the spaceship, and allowing the relations of companionship arise between subjugated subjects, like Vinnie and Black Alice. Even though Vinnie is a source of nurture and care, providing her crew with light, air, water, and “absorb[ing], filter[ing], recycl[ing] and excret[ing]” every waste substance they produce, she chooses to give to Black Alice more than expected responding to Black Alice’s affection towards her. (Bear and Monette 9) Boojums are supposed to take direct orders only from the captain and the chief engineer, but Vinnie gives Black Alice water following her verbal request, and initiates conversation trying to help Black Alice, when the ship is attacked. Black Alice, a human woman joins the pirate crew after “Venusian Riots” and cannot leave the ship for political reasons, despite the unfavourable position of a junior member of the crew. (3) Vinnie’s movement is also physically limited by the governor, and her closeness with Black Alice arises out of the semi-consensual position in the crew, bringing them together, both physically and emotionally, with Black Alice spending most of her time inside Vinnie, servicing her, experiencing her materiality. In contrast, Captain Song, also a woman, is endowed with power both over the crew and the boojum, and, wielding this power, she ruthlessly and greedily chases profit, causing the Mi-Go’s attack. She pointedly lacks any

caring and nurturing qualities, either towards her crew or the boojum, actively perpetuating an oppressive system.

Like Black Alice, Binti, a woman of colour, develops a connection with Third Fish and New Fish, however, the Binti novella series is focused on non-Western spaces, imagining the future Himba tribe, technological experts, of whom Binti is a proud daughter. The relations within the tribe are pointedly traditional, with Binti breaking every imaginable rule by going to Oomza University, which undermines her desirability as a wife. Binti realizes that her behaviour is controversial, breaking away from many traditional gendered expectations, and causes rejection in some of her family members, but she bravely follows her path, carving her own patterns of femininity. She asserts her right to go where she wants to and connect with different humans and nonhumans, while still retaining a desire to get married and become a mother. Third Fish, likewise, creates her own path and her own ways to connect with humans, sending her daughter to help Binti. This freedom resists the limitation of patriarchal norms, but accepts parts of traditional femininity, showing that performance of gender is as much individual, as prescribed by the social norms.

Gendering of the alien or nonhuman animal in these examples brings the nonhuman closer to humanness, sometimes to the point of erasing the difference, like “Specialist.” However, it also plays into gendered stereotypes, which this gendering either sustains or questions. “Specialist” complies to the views of femininity and masculinity, typical for the 1950s SF. *Farscape’s* experimentation with gender performances is cut short by *The Peacekeeper’s Wars*, and never fully applies to Moya, whose performance is based around the associations of care and nurture from the very first season. “Boojum” and the Binti novella series offer a more solid challenge to the traditional associations, both giving an array of possible performances of femininity, while retaining the relations of care and nurture formed between the passengers and the organic sentient spaceship.

## 2.2 Ambiguous Gender of the Nonhuman Animal

This subsection considers how lack of gendering or ambiguous gendering influences the hierarchical presumptions and relations between humans and the organic sentient spaceship. The lack of gendering of the Spline in the Xeelee Sequence, expressed by the neutral pronoun “it,” solidifies the divide between the human and the nonhuman, and sustains the anthropocentric paradigm, where humans have an unquestioned right to exploit and oppress the nonhuman other. In *Lexx*, the organic sentient spaceship ends up gendered as a male, however, this gendering does not reflect the reality of his body and his sex. Producing an offspring makes gendering as a male ambiguous, imposed from the outside and fitting human patterns and stereotyping. Even though gendering does reflect a growing connection between the Lexx and the crew, it also accentuates the alien and the insect in him, which rather than questioning boundaries, re-establishes them.

Collective humanity of the Xeelee universe does not perceive the Spline spaceships as personalities; they are objects of scientific investigation, tools of colonial expansion, cattle whose power is used for construction and demolition tasks. This consumerist attitude to the Spline, even when they are still independent providing services to many “client” species, defines them as a resource to be controlled rather than a being to be treated as an equal. (Baxter *Resplendent* 236) This attitude dictates the neutral pronoun, the description of the Spline’s bodily reality as abject, and the perception of the Spline’s body as a hostile environment where a human needs to survive. The Spline is rarely described as a coherent being, becoming disarticulated parts, organs, passages, chambers, and veins; the Spline do not have names, even number identifications, neither have they male or female attributes. These absences speak louder than the most colourful descriptions. The Spline constitutes an important part of the Xeelee Universe: their species of the living sentient spaceships are “a key element of the Expansion’s strategy,” the strategy of humanity’s colonial progression into the wider galaxy, accompanied by Assimilation, implying “contact, conquest,

absorption,” in which they remain an object to be used. (236, 232) Assimilation is conceived, performed, and intended to benefit only humans, and both sentience and agency of the Spline are ignored, as it does not directly benefit humans.

In *Lexx*, even though the pronoun used to refer to the organic sentient spaceship shifts from “it” to “he,” it does not endow him with a full personhood, firstly, because of the insect alien element, the otherness of which is too strong to overcome, and secondly, because the Lexx is still under the full control of the human captain, having little weight in decision making, except for the moments when he follows his primary needs, like food or mating. The nonhumanness and objectification are evident in the haphazard use of the definite article before the name of the ship, which is retained throughout the show. In the Binti novella series, the gender of Third Fish is clearly identified from her first appearance and is then accentuated by Binti’s emphasis on the pronoun; in contrast, for the Lexx “it” is used throughout the first season, and “he” starts to appear haphazardly in Season Two, taking full hold only in the last episode of the season – “The End of Universe.” The Lexx’s masculinity settles in the traditionalist gender paradigm of the show, with the spaceship’s phallic shape, formidable weapons, and proneness for destruction. But the Lexx’s ability to carry and birth an offspring in season four places the spaceship completely outside the habitual borders of mammalian sex, with male pregnancy untypical for both mammals and arthropods, reminding of the alien and the artificial in the spaceship. The Lexx remains “one remarkable bug,” an objectified other, a resource used for human survival. (“Love Grows” 43:49-43:53) The blurred boundaries of sex and species in the Lexx reiterate the abject as “in-between, the ambiguous, the composite,” insistently engaging in a boundary-building process, dividing the human from the hybrid of the insect and the machine.<sup>56</sup> (Kristeva 4) The Lexx’s arc is an optimistic version of the human-alien relations of the Xeelee Sequence: the Spline

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<sup>56</sup> The association between robots and insects is discussed later in the Chapter.

are treated as livestock, while the Lexx as a pet gets gendered, reflecting growing closeness between humans and the nonhuman animal, but doing little to alleviate the objectification.

The primary aim of gendering organic sentient spaceships is to define their relation to humanness, and while imbued with potential for recognition of them as equal to humans, it also serves to draw the boundary between the human and nonhuman, reiterate the hierarchical relations, casting the other as inferior. In “Specialist,” the potential of gendering for inclusion into humanness is fully realised, but it immediately negates the difference by the universalist approach. *Farscape*, “Boojum,” and the Binti novella series give a more nuanced picture, accounting for difference, but retain hierarchies, even though the anthropocentrism in these hierarchies is challenged. The Xeelee Sequence and *Lexx* do not question the anthropocentric paradigm, and gendering of the Lexx does little to question hierarchies, the nonhuman animal and alien remaining subjugated in both the series and the show.

### 3. Reproduction

The focus on reproduction recurrent in the works featuring nonhuman organic sentient spaceships accentuates the parallel between them and domesticated animals.<sup>57</sup> Reproduction becomes a site of control and exploitation where the human exercises power over the nonhuman other, exposing a limitation of freedom and perceived lack of agency of the nonhuman animal. This section foregrounds subjugation apparent in the human uses of the nonhuman organic sentient spaceship’s reproduction, which divides the considered works into two groups. The first group, centring on the Xeelee Sequence and *Farscape*, and mentioning “Boojum,” examines how reproduction becomes a tool of control, revealing the

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<sup>57</sup> Abel Alves in “Domestication: Coevolution” describes domestication as a process “both teach[ing] behaviours, and through artificial selection, chang[ing] biological programming,” speaking about the mutual influence of humans and nonhuman animals. (37) He argues that domestication is a coevolutionary process, where both humans and nonhuman animals interact and change and the nonhuman agency is recognised, contrasting it to the idea of domestication as a full domination of the human over the nonhuman animal: “Domestication is a function of human dominance, the human desire to nurture and the agency and sociability of nonhuman animals. Although power is unequal in domestication, nonhuman animals, as sentient beings, contribute to the process and change humans to some extent.” (38)

vulnerability of the nonhuman animal. The second group, consisting of *Lexx* and the Binti series, searches for the trends challenging the human control over the nonhuman other and creating unexpected variation within the framework of the human design.

In contrast to the human-machine combination of the sentient spaceship, reproduction rather than sexuality becomes the point of interest, sustaining the association of sexuality with humanness, which is highlighted in Chapter One. In line with it, “Specialist,” where the organic sentient spaceship contains a human element, is the only work in this chapter, mentioning a heterosexual desire. The newfound Pusher – a terrestrial man is concerned about his sexual life in the galactic centre, but as soon as the Talker reassures him that there are “Pusher females” in the galactic centre where they are going, the discussion ends, leaving both the alien and human reproduction in the background. (Sheckley 81) The comparison of the description of the nonhuman organic sentient spaceship’s reproduction and human reproduction, however, exposes the hierarchies underlying and shaping the relations between the human and the nonhuman animal. The contrasting ideas about human and nonhuman reproduction indicate anthropocentric views of human-animal relations. When the attitudes to the human and nonhuman reproduction are subject to similar trends or the human and nonhuman reproduction are discussed in similar contexts, it testifies to the questioning of the hierarchical anthropocentric presumptions.

### **3.1 Reproduction as a Method of Control**

Reproduction is an area where care and control are closely intertwined; it invites reflections on the care about the offspring, provided by a parent and other caregivers, and of the norms and regulations imposed on the practices of reproduction on both human and nonhuman animals. In the Xeelee Sequence and *Farscape* intervention into the reproduction process of the spacefaring animal accentuates the aspect of human control over the other, either through the invasion of the Spline’s breeding ground or through the Peacekeepers’ invasive laboratory practices. Despite this similarity in approaching the aspect of control,



these works have a crucial difference in the aspect of care associated with reproduction. The Xeelee Sequence assigns care singularly to humans, thus signalling a clear boundary between the human and the animal, the latter being treated as a resource in strategic planning rather than a feeling agent. *Farscape* accentuates a cross-species character of care between parents and offspring, portraying both humans and Leviathans as parents, and contrasts these relations to the Peacekeeper oppressive practices rendering both humans and nonhumans as parts of an oppressive system. In “Boojum,” Black Alice draws a similar connection between reproduction and the restrictions imposed on Vinnie’s movement: “Vinnie, she remembered, had been born over Uranus. ‘Do you want to go home, Vinnie? [...] Is that what’s wrong?’” (Bear and Monette 10) Black Alice’s guess is, however, incorrect, as Vinnie is urged to move away from her breeding ground to the Big Empty, a new stage in her life cycle.

A clear boundary between the Spline’s and human’s reproduction permeates both the way these two processes are depicted, and the respective vocabulary used for the process in different species. Contributing to the line of absences in the Spline’s image, no Spline is shown to produce an offspring in the Xeelee Sequence; reproduction remains behind the scenes even in “Breeding Ground,” where humans obtain the knowledge of the Spline’s home planet. This absence also implies the exclusion of the Spline from the concept of care, neither showing the care a Spline parent gives to an infant, nor letting humans interact with the Spline in a nurturing way. The focus in the short story, directly related to the Spline’s reproduction, is humans’ managing to find the Spline’s “breeding ground,” and establish a full control over them. (Baxter *Resplendent* 244) The Spline come to breed to the oceans of their home world, and by restricting the access to this planetary system humanity ends the “free Spline.” (246) The Spline are compared with elephants and whales, and in line with this comparison, characters use “school” to describe the young Spline and “to graze” to describe the Spline’s feeding process; the first word invokes obvious connection with fish, which humans feel entitled to use and consume; “to graze” reiterates the association with the

cattle, fully under the human control. This vocabulary draws a clear boundary between the human and the nonhuman, allocating them the same hierarchical position as all nonhuman animals in liberal humanism and defining humans' attitude to them.

A contrasting framing of human reproduction deepens the divide. Human reproduction in *Xeelee: Redemption*, is referred to as “the most human of new objectives,” the essential component of conquering the Xeelee and other alien invaders. (Baxter *Xeelee: Redemption* Chapter 9) Human reproduction is a glorified task, a part of being a human, and is to be sustained especially in the adverse conditions of the one-sided war with the Xeelee. Human reproduction is a strength, while the nonhuman animal's reproduction is a vulnerability, a means that humans employ to control the other. The humans, enslaving the Spline, claim the ownership of the territory and consider themselves the masters of a sentient race, revealing the coloniser's mindset. In the paradigm of care and control, the absence of care associated with reproduction in the Spline intensifies their alien nature, and humans' inability to properly connect with them. The significance of reproduction as a tool of control emphasises the perception of the Spline as a lower, less-than-human creature, which the human is entitled to “contact, conquer and absorb,” emphasising the anthropocentric perspective of the series. (Baxter *Resplendent* 232)

In *Farscape*, both humans and nonhuman animals are subjected to the control of the Peacekeepers, aspiring to intervene into reproduction using technological means; the Peacekeepers' regime imposes strict limitations on reproduction exercising control over human's and nonhuman animal's bodies. They become “disposable bod[ies]”, in a “political economy of full-scale [...] material exploitation”, fitting Braidotti's description of “advanced capitalism.” (*Posthuman* 70) The Peacekeepers are reduced to genetic material, bred for physical perfection, with their pregnancies fully controlled, starting from the choice

of partner to the time of initiating pregnancy and giving birth.<sup>58</sup> The governing system makes these decisions to accommodate for the best genetic matches and make potential parents perform their military duty as long and fully as possible. Children are taken immediately from their parents and are brought up in special facilities. Likewise, Moya, captured by the Peacekeepers, does not go through a natural cycle of the Leviathans' mating and pregnancy. Her reproductive system is subjected to experiments on producing a Leviathan gunship: her body is artificially inseminated to obtain a modified foetus, and the pregnancy is "conserved" through a "shield," the breaking of which activates Talyn's development. ("The Way We Weren't" 31:04; "They've Got a Secret" 41:46-41:55) Talyn is genetically modified to have guns breaking the non-violent intent of the Builders and due to unusual body shape must shoot his own mother's birthing channel to be born, turning the process of birth into a violent encounter.<sup>59</sup> Talyn is born more independent than a usual Leviathan spending a long time with their parents, mirroring the separation of human parents with their children and accentuating the breaking of the bond of parental care in the Peacekeeper system.

Moya and her crew fleeing from the Peacekeeper-controlled territory oppose the oppressive practices with the relations of care they form both with each other and their offspring. Moya becomes a metaphorical mother to the crew, providing them with air, water, gravity, and safety of home in outer space and a real mother for Talyn. Even though Talyn is not a usual Leviathan their loyalty to each other becomes a significant plotline in *Farscape*. Developing the issue of care between human mothers and children, Aeryn Sun, a former Peacekeeper and a member of Moya's crew of escapees, gets involved into an exploration

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<sup>58</sup> The Sebaceans are the Peacekeepers' dominant species. They were developed by the Eidelons from humans as a guardian species. The Sebaceans look like humans, but have some physiological differences, for instance, they have better eyesight and longer lifespans, but are highly intolerant to overheating. The Eidelons were the species of negotiators who sustained peace between different species of aliens and the Sebaceans provided for their protection. However, when the Eidelons suddenly disappeared, the Peacekeepers lost their purpose and enforced peace with weapons, developing an empire-like political entity. The critique of the US foreign policy is apparent in both the name and purpose description of the Peacekeepers. ("Crackers Don't Matter," "...Different Destinations," "Exodus From Genesis," *The Peacekeeper Wars*)

<sup>59</sup> The Peacekeeper tampering with reproductive systems in military purposes raises ethical issues of human and nonhuman animal experimentation, which are discussed in Chapter Five.

of her own background, encountering both her biological mother and father, and later becomes a mother herself outside of the Peacekeeper imperial system. Her exploration of how her identity is shaped by her mother's words that she was "conceived in love" and the relations of care and connection with her current crew and her future child mirrors Moya's experiences of childbirth. ("Thanks for Sharing" 13:51-15:02) Both parental care and interpersonal relations of care that are developed between Moya and the crew, and within the crew, establish her as an agent and site of resistance to the Peacekeepers' oppressive practices, while the parallels between Aeryn Sun, an alien coded as human, and Moya, a spacefaring animal, work to erase the line dividing the human and the nonhuman and question anthropocentric hierarchies.

The control humans exercise over their own reproduction and nonhuman animals' reproduction reflects the biopolitics of the imperial expansion, which, though presented in a different light, epitomises the regulatory approach to all lives in the empire.<sup>60</sup> The Xeelee Sequence resting on humanist principles of the ultimate value of human life praises human reproduction and utilises the Splines. *Farscape* overtly critiques imperial systems and does not make a distinction between sentient species, showing the implications of the imperial regulatory practices on both humans and nonhumans and giving a posthumanist vision of species relations. In the area of reproduction, distinction between the human and nonhuman is a boundary-making practice constructing hierarchical relations, while the lack of this distinction is an equalizing practice questioning anthropocentric hierarchies.

### **3.2 Finding New Forms Through Reproduction**

*Lexx* and the *Binti* series are united by the introduction of new forms of inter-species connectivity through reproductive processes, which challenges the pattern of control,

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<sup>60</sup> Michel Foucault introduces the notions of biopolitics in *The History of Sexuality*. He traces its development to the seventeenth century, when "power over life" obtained "two basic forms": "the body as a machine," and "the species body." (139) Reproduction genetically belongs to the second "form": "the body imbued with the mechanics of life and serving as the basis of the biological processes: propagation, births and mortality, the level of health, life expectancy and longevity." (139) Foucault refers to "a series of interventions and *regulatory controls*" designed to supervise these processes as "*a biopolitics of the population.*" (139, emphasis original)

implicitly imposed on them through their origin as artificial species designed by humans. While the fullness of humans' control over the engineered species is questioned through reproduction of the Lexx and Miri-12s in a comparable manner, the patterns of care involved in the relations of the parent with the offspring diverge significantly in these spacefaring animals. Care associated with reproduction is absent in *Lexx*, while in the Binti series care is central both in producing an offspring and creating a bond with a representative of a different species.

Reproduction crossing the boundaries of not only species and ecosystems, but planets, happening in *Lexx*, both reiterates the insect alienness in the sentient spaceship and questions the otherwise firmly established relations of control between humans and the spacefaring animal. Mating of the Lexx, a singular human-designed specimen based on materials from a different universe, and a terrestrial dragonfly, resulting in Little Lexx's conception, goes beyond crossing the boundaries of species, and ecosystems, and in its ideological essence resembles the treatment of matter, freely transforming on the Lexx. Little Lexx is not a copy of the Lexx, it looks more organic, has a bendable tail, and lacks a voice console. When the Lexx dies of the old age – he is more than four thousand years old by the end of the series – and exhaustion from the orders to fire at different objects around Earth and the planet itself, Little Lexx emerges out of the Lexx's disintegrating body. Little Lexx's birth resembles both an appearance of a butterfly from a cocoon, and a mammalian pregnancy with a foetus developing inside the mother's body. The ambiguity of the species boundaries both through the mating and birthing process invokes the monstrosity and the abject in the Lexx, and its connection with incomprehensible insects. Mating is the second occasion where the Lexx violates the conditioning to obey the captain's orders; it happens without human knowledge or impetus and shows a failure in human control over the nonhuman animal/alien. The lack of surveillance from humans, and their inability to notice the changes in the Lexx is an indisputable sign of his agency, and the ability to act without

direct orders. For the Lexx, bearing a child becomes a moment of ultimate freedom, his own action, unsupervised by his human masters.

As freeing as it can potentially be, the birth of Little Lexx does not radically shift the anthropocentric paradigm of the show, a bit too conveniently accommodating the need of the Lexx's crew to get away from the Solar System. Escaping the unwelcoming planet and its population, the crew board Little Lexx, and the Lexx's captain claims control over Little Lexx, which the latter does not challenge. It implies that the programming of the Lexx is inherited by the offspring, foregrounding relations of control between humans and the spacefaring animal. Simultaneously, the TV show implies Little Lexx has no personal contact with its biological parent, eliminating any relations of care that might arise between them. Humans perceive the new-born spaceship as an instrument and expect it to provide them with air, food, safety, gravity, and transportation, rather than take it upon themselves to become parents for Little Lexx, reinstating the anthropocentric status quo.<sup>61</sup>

In the Binti Series, reproduction is a site of freedom and unpredictability, which is not always understood, let alone controlled by humans; it is also a biological and socialising process, involving care and education for the Miri-12. New Fish, a new-born daughter of Third Fish, has a microbiota that repairs Binti's dead body and resurrects her, following her mother's instruction. The active microbiota of the new-born Miri-12 transforms Binti's body, permanently changing her genetics and making her a part of the ship, forming a connection between the human and the spacefaring animal that has not been foreseen or initiated by human designers, but comes from nonhuman animals, exercising their agency. The microbiota appears due to seeding the oxygen-producing plants from the parent spaceship in

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<sup>61</sup> Relations of care do arise between a human and an animal in the show. In the first season, a cluster lizard hatches in the Lexx and imprints on Kai, considering him its "mother." Kai is the most mature crew member and forms relations of care with the lizard, educating it, giving it food, and protecting it from the crew and vice versa (cluster lizards prefer a diet of brain tissue). However, eventually the cluster lizard becomes a tool to kill Gigashadow and dies in the process. Kai brings it to Gigashadow's brain, and the lizard devours it, causing both the gigantic insect's and its own death. Kai dies in the last shot fired by Lexx and is not there to care for Little Lexx.

the child's breathing chambers. (Okorafor *Binti* 321) The natural process of transmission of mother's biota to a child in a human-designed species reveals the porosity of the boundary between the natural and the artificial: the technological enhancement of the breathing chambers allowing Miri-12 to survive in the conditions of space becomes a site of natural transmission of microbiota from one specimen to the other, just like it happens in natural, including human, childbirth. The Miri-12s' five-year pregnancy is not limited to biological functions: during it their offspring matures in the mother's body, travelling with her and learning how to navigate in space and how to interact with humans and nonhuman species, including learning language skills. (323) The transfer of skills happening during the long gestation establishes relations of care between the parent and child, which does not differ from human parent-child relations. The focus on the care, both within the species in the parent-child relation and outside of it healing Binti, and connectivity and mutability of the species boundaries questioning human control over the designed species challenge anthropocentrism, showing that social connections and biological entanglements between different species are a part of coevolutionary process that is neither initiated, nor foreseen by humans.

With the hereditary transmission of knowledge and skills and Binti's identity-building based on tribal belonging, reproduction becomes an important theme not only for the explanation of Binti's miraculous survival, but also for her personal life and future. Visiting the doctor at the end of *Binti: The Night Masquerade*, Binti learns that the mixture of different species that her body represents affects her potential children: they will have *okuoko* and will be partly New Fish, carrying on the histories of Binti's inter- and intra-actions, resembling the trans-corporeal effects that are revealed through time and generations. The information on the changes that her children will inherit makes Binti question of her humanity: "am I ever really even me?", "Am I human?" (Okorafor 348) The intra-actions and transformations that Binti's body undergoes and the potential for which it

harbours, are a testimony to an uninterrupted process of becoming that has not been studied or experienced by another human before. These transformations, with all their positive effects and experiences, are still connected with trauma and choices that are not fully of Binti's making, showing how human agency is only a part of the entanglement of various agencies that include both the human and nonhuman. It also is a testimony to the limits of the knowledge of the human and these limits cannot be breached by force but can be learned through respect towards the nonhuman others with whom we share the environment.

Both the Lexx and the Miri-12 are a tailor-made, human-designed nonhuman animals, so their reproduction overflowing the patterns of their design or opening new ways of connections and entanglements with other species through their reproductive and growing abilities becomes a statement of freedom, of blurring the boundaries, and dismantling human exceptionalism showing how even something that is created by humans is not fully under their control. *Lexx*, however, refrains from developing this idea, reducing Little Lexx to a tool, and re-establishing the patterns of control over the nonhuman animal, which is predetermined by the anthropocentric paradigm of the TV series. The anthropocentric paradigm or a challenge to it in the works eventually becomes the main criterion defining the function of the spacefaring animal's reproduction. The Xeelee Sequence and *Lexx* use reproduction of the spacefaring animal to show the gap between species, to draw a boundary between the human and nonhuman. In *Farscape* and the Binti series, human and nonhuman reproduction share patterns of care and resist patterns of control imposed by the oppressive systems built on anthropocentric logic.

#### **4. Emotions, Communication, and Coevolution**

While for the human-machine sentient spaceship, emotions are a contentious point, and their presence, modifications, and functions in the cyborgian body are closely examined to determine the relations of the cyborg to the category of humanness, in the organic sentient spaceship, emotionality of the organic sentient spaceship causes little doubt, due to the



commonalities in human and nonhuman animals' emotions, established by Darwin in *The Expression of Emotions in Man and Animals* (1872). Hence, the main concern shifts from the presence and function of emotions to their significance in the human and nonhuman animal interaction. The ability to notice and sympathise with the nonhuman animal's suffering rather than only capacity to communicate with the nonhuman other is a crucial marker of the quality of humans and spacefaring aliens/animals' emotional exchange and of its potential exchange to challenge to hierarchical relations, centring on the human. Following Jeremy Bentham, Jacques Derrida writes: The *first* and *decisive* question would rather be to know whether animals *can suffer*. (Derrida 27, emphasis original). Recognition of suffering and desire to alleviate it contribute more to a deep interspecies connection than the presence of direct and easy means of communication, like verbal communication, providing for facile understanding among participants.

Communication between species is central for establishing contact, however, does not necessarily mean understanding of the difference between species, let alone understanding this difference as affirmative. Sherryl Vint in *Animal Alterity: Science Fiction and the Question of the Animal* writes:

Yet if humans and animals are to share a language game and build a world which is common to both, we must do so in a way that breaks free of romanticised versions of human-animal relations under a different regime [...]. Perfect knowledge does not immediately and without struggle lead to perfect harmony. (69)

Likewise, means of direct communication, be it verbal communication or a neural interface, do not provide for genuine interest in comprehending the other, but rather serve as a way either to erase or ignore this difference. In contrast, communication that requires effort on the part of both participants that develops and unfolds offers an opportunity to create a bond between species overcoming the hierarchical bias and challenging the established oppressive patterns. This contrast serves as a principle of grouping the analysed works in this section

with the first subsection considering easy fixes in interspecies communication, while the second dwells on the complicated process of establishing communication between species.

Challenging the anthropocentric patterns in the works entails both recognition of the complicated processes of interspecies interaction and attempts to reimagine human-animal relations where human-centred hierarchies shift or are dismantled. In *Staying With the Trouble: Making Kin in the Chthulucene*, Haraway writes: “No species, not even our own arrogant one pretending to be good individuals in so-called modern Western scripts, acts alone; assemblages of organic species and of abiotic actors make history, the evolutionary kind and the other kinds too.” (100) The organic sentient spaceship as an assemblage of multiple species working together, of which humans are a part, testifies to the presence of nonhuman agencies and invites to see all agents as an interconnected network rather than a hierarchical system. Distribution of agency arising in the assemblage also presents evolutionary processes happening among the species working together as a coevolution. Alves writes:

[T]he term “coevolution” refers to the “complementary evolution of closely associated species” (as in an “arms race” between predator and prey affecting such traits as speed and stealth). It can also be understood as the interaction of genes and learned adaptations, or culture, within a given species. By extension then, “coevolution” may also be the interaction of genes and culture involving more than one species, as in the process of domestication.

Focusing on the interaction of genes and culture, the process of transformation that humans and nonhumans experience in a complex entanglement of the organic sentient spaceship assemblage is a coevolutionary process, where all the species have agency to influence each other.

#### 4.1 Communication Taken For Granted

“Specialist,” the Xeelee Sequence and *Lexx* pay little attention to communication between different species as an encounter of diverging experiences of embodiment, emotions, and subjectivities. Contact between different species is rather an instrumental act for achieving a certain objective. It is presented as a simple action afforded by mediation of a specialised species, like Talkers in “Specialist” or technology, like a neural interface in the Xeelee Sequence, or a language console in *Lexx*. In “Specialist,” this dismissive simplification results in erasing potential differences between species, foregrounding their commonalities in a universalist manner. Both the Xeelee Sequence and *Lexx* cast communication with the spacefaring animal as intended solely to control and give orders. In both works, humans are not interested in bridging the gap between species, and taking effort to appreciate difference, and the spacefaring animal has only instrumental value.

All species comprising the organic sentient spaceship in “Specialist” can seamlessly connect with each other, revealing a striking similarity in emotions and ways of thinking. With a clear moral message and simplistic plot, the short story is a parable, to which the lack of complexity in emotional exchanges can be attributed. The connection is mediated by Talker, the focal character of the short story, whose spider-like body physically connects all the participants comprising the sentient spaceship and allows them to talk to each other independently. (Sheckley 79) This connection also facilitates faster-than-light travel through Co-operation, which unites all species in a symbiotic organism creating a mental link between all species on the sentient spaceship. The Co-operation, based on the bodily connection between the organisms, essentially resembles the “irreducibly bodily and autonomic nature of affect.” (Massumi “The Autonomy of Affect” 89) The shared experience of affect in the bodies of aliens translates into a shared cognition and allows them to process, interpret, and function as a single entity. However, neither the simplicity of the parable, nor the capacity of affect to influence both “physical” and “biological,” overcoming the

boundaries of both species and ontologies, does not explain the full comprehensibility of emotions between different species. Emotions of the aliens are basically human, making it easy for their abductee to understand them, even though the short story insists on imagining aliens from “different planets representing different ethics.” (Sheckley 82) Just like humans working together, aliens are appropriately humorous in their daily routines. They are unanimously shocked by mechanical civilization and perplexed by human wars. Surprising sameness of emotions and ethical judgements effectively erases differences, and ignores varying histories of species, anatomies, and environments, revealing the universalist leaning of the short story. Different aliens are mere different humans wearing colourful costumes of extravagant alien bodies, being “one” underneath their skins, which eliminates any exploration of otherness and appreciation for difference.<sup>62</sup> Thus, the short story’s message of peace and cooperation as an overarching design for all sentient species is both bold, considering the Cold War environment, and naïve in its attempt to reduce difference, both in humans and alien species.

In “Specialist,” all sentient species in the Galaxy evolve to merge for the purpose of collaboration in space travel, but humanity got separated “from “the main stream of the Galaxy,” developed mechanical civilization, and started fighting with each other, losing their purpose. (Sheckley 81) It prescribes a cooperative, rather than competitive character to evolution: species work together reaching a shared goal, rather than compete for resources and survival, resembling coevolution. What differentiates it from co-evolution is that these species evolve to become a potentially united organism independently, without any connection or exchange. This story is Sheckley’s dream of peace, an urge for harmonious co-existence of humans in the face of the dreadful consequences of World War Two and ongoing military actions in Korea, as well as the tensions of the Cold War, which

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<sup>62</sup> Enhancing the universalist approach is the choice of the human character. A white heterosexual American male, representing the humanist ideal, is taken as an average representative of humanity, as it is often the case for the racial and sexual landscape of the 1950s science fiction, with an obvious lack of diversity in gender, class, race, ability, and sexuality. (Attebery 5)

predetermines the simplicity of worldbuilding.<sup>63</sup> “Specialist” ignores the fact that humans are not the only species evolved on Earth, reflecting the anthropocentric perspective. Nevertheless, the body of the spaceship is a coevolutionary entity, a conglomerate of species with distributed agency that is fully recognised by all participants. Each representative participates in the decision-making process: the course of actions is defined by a “vote,” and the right to vote extends to the human abductee, giving him a choice whether to join and save the spaceship or stay on Earth; in Co-operation, however, they work as a united organism. (Sheckley 73) This resembles Barad’s definition of phenomena as “*the ontological inseparability of agentially intra-acting components.*” (Barad “Posthumanist Performativity” 815, emphasis original) Specific agential intra-action, according to Barad, actualises “boundaries and properties of the “components” of phenomena and endows meaningfulness to “embodied concepts.” (815) The conceptual premise of “Specialist” implies that different species are a part of ontological inseparability, expressed in Co-operation, they are created to become a part of it and separate temporarily through agential intra-actions, dividing them from the whole with an intention to reunite. Diverging from new materialist principles, Cooperation envelops only organic agents, and their agency is directly connected with their sentience.<sup>64</sup>

Like the aliens in “Specialist,” in the Xeelee Sequence, humans can communicate with the Spline and merge their consciousness with them, but the mediation is carried out by a technological fix of a neural interface. In contrast to “Specialist,” the Spline, an alien species, do not have a voice in the story of collective humanity conquering the universe in the Xeelee Sequence. The Spline never talk; their emotions, feelings or perception of the

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<sup>63</sup> Sheckley joined the US army in 1946-1948, and was sent to Korea, according to his note about himself in *Untouched by Human Hands*. (1954)

<sup>64</sup> New materialist thought untangles the association of the agency with sentience and embraces matter as agential: “new materialisms [...] all insist upon the significance and agency of materiality.” (Alaimo “New materialisms” 177) Focusing on organic human-like species, “Specialist” ignores both nonhuman animal species, and natural environment as agential, accepting the anthropocentric paradigm of the time unquestioningly.

world are never described by people or other aliens connected to them, indicating yet another blind spot like those of gender and reproduction. The neural interface provides for an easy mental connection between the Spline and other species, like the Qax and humans, and gives control of the Spline's body, for instance the Qax merged "with their own awareness alongside the continuing sentience of the Spline." (Baxter *Timelike Infinity* Chapter 12) Humans, interfacing with the Spline, are a special class of a starship's personnel, called "wetbacks." (Baxter *Resplendent* 227) A wetback's job is described as undesirable in "Breeding Ground" and "The Great Game." Even people who become wetbacks seem to resent the appointment: "It galled him to become a wetback." (Baxter *Resplendent* 227, 232, 261) The constant contact with the "obscenity" of the Spline's body transfers the alienation that characters invariably experience in contact with the Spline on the wetbacks. (Baxter *Timelike Infinity* Chapter 11) These absences – of the Spline's voice, representation, agency – predict the Spline's destiny as a species fully subjugated by the human and made into obedient tools of collective humanity's colonization project.

The Xeelee Sequence portrays the Spline as a feeling creature only in their suffering and pain, providing a strange echo to Bentham's question about nonhuman animals: "*can they suffer?*" but failing to shift the colonial paradigm of subjugating the Spline. In *Timelike Infinity*, Miriam Berg and Jasoft Parz recognize the Spline as alive and sentient, feeling sympathy to it: the former when killing the attacking Spline, the latter passing through the same torturous experience of a wormhole passage as a Spline. (Baxter *Timelike Infinity* Chapter 11, Chapter 8) However, it does not shift their attitude to the Spline, who remain a tool, first weaponised by the Qax, and then by the humans themselves, while the Spline's consciousness, sentience, and capacity to negotiate are ignored. Moreover, sympathy becomes instrumental in connecting with a dying Spline's body, using a "sophisticated conscious entity as a front end," "sympathetically" "feel[ing] its way into what's left of the Spline's – identity." (Chapter 12) This entity is Harry Poole, a Virtual, and his experience of

interfacing with the dead Spline is the closest impression of what it is like to be a Spline that the series provides, and this experience is marred by the controversial attitude to the Virtuals themselves, which both are a disembodied promise of transcendence of the flesh, and simultaneously not human enough. He feels the pain the Spline constantly experiences due to the technological modifications and sees the “grandeur in being a Spline,” but the value of this experience is undermined by another absence – the consciousness of the Spline is dead when Harry Poole inhabits its body. (Chapter 12) The Spline’s suffering is not enough for a mental shift in humans’ attitude, and ironically even empathy becomes a way of exploiting the nonhuman animal, instead of connecting the human and the nonhuman.

The example of the interspecies relations between the Spline and the human is indicative of the general paradigm of the relations with aliens, except for the Xeelee. Baxter condemns the war with the Xeelee and portrays it as an essentially stupid, failed attempt, most prominently in “The Great Game,” showing how a fake pretext is used to start the war itself. In the hierarchical structure of the series, the Xeelee have reached the highest position and get to disregard everything except for their own war against the death of the universe from the dark matter form of life – Photino Birds. Humans with their expansion and conquest seem to covet this position for themselves, with which Baxter disagrees, but this disagreement is tainted by the idea that the Xeelee’s war is a noble effort to save the Universe or the sentient of the barionic life.<sup>65</sup> In contrast to these clear-cut relations between the top-ranking species in the Xeelee Sequence, other species of aliens form a network of varied relations and connections between each other, negotiating, making alliances, trading, and fighting. For instance, the Spline are complex symbiotic entities, and their body is home to various “semi-sentient” – as Parz describes them – drones, which behave rationally trying to save their lives in a situation of danger. The drones try to negotiate their survival on the lethal

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<sup>65</sup> The desire of humans to fight endless wars, condemned by Baxter without conviction, is a core characteristic of human survival in Saberhagen’s Berserker series, considered in Chapter 3.

mission of destroying the wormhole with Harry Poole, controlling the Spline's dying body. While Harry enters the negotiation, Michael Poole dismisses it, focusing on saving humans on board the Spline and caring little for other species inadvertently involved in his suicide mission. Thus, humans exclude themselves from this network of inter-species relations, seeing themselves as superior species and other species – as mere targets for expansion. This aspiration for the universal dominance, coupled with the human's repulsion towards the Spline's body and metaphorical deafness towards their suffering, voices the general anthropocentric dynamics of the series.

To ensure communication with the spacefaring animal, human designers equip the Lexx with a technological console, producing speech, which is as much of a technological fix, as a neural interface in the Xeelee Sequence; it does not promote in-depth understanding between humans and the nonhuman animal, but makes communication convenient for humans. Humans generally use the Lexx's ability to understand speech and speak coherently for giving orders or getting information from the Lexx, showing little interest in the Lexx's opinion or inclinations. Consequently, communication between humans and the Lexx does not make the participants closer or more understandable to each other. The Lexx remains an abject monster, snacking on dismembered human bodies, supplied by the Divine Order, and "blow[ing] up planets." ("Eating Pattern" 02:03-2:29) The Lexx's monstrous cruelty rests on both his initial programming as the Divine Shadow's weapon and his insect origin. After the passage through the fractal core to the Dark Universe, the programming is partially erased and the Lexx is freed from unconditional obedience to the Divine Shadow, but he remains "the most powerful weapon", a tool, accepting the authority of the person with the key unquestioningly. ("I Worship His Shadow" 1:28:13-1:28:23) Adam Dodd in "Entomological Rhetoric and the Fabrication of the Insect World" notes: "the perceived extraterrestriality or general otherworldliness of the insect is fused with its apparently robotic nature." (117) The association between the robotic and the insect conflates computer



programming with biological programming, implying the prescriptiveness of behaviour in both the machine and the insect. The insect species in *Lexx* has other features, enhancing the association, including lack of empathy and predictability, making them vulnerable to the human ingenuity of the Brunnen-G and causing their final defeat by Kai.<sup>66</sup> (“End Of The Universe” 38:32-38:45) The lack of ethical principles, monstrous thirst for destruction and insect-like behaviour cast the Lexx as the other, with whom humans cannot create a meaningful connection, despite the presence of verbal communication.

Countering the Lexx’s insect cruelty is his capacity for forming attachment, and most importantly suffering. The Lexx dying of senility confesses that Stanley Tweedle, the protagonist of the TV show, is his “favourite” captain. (“Yo Way Yo” 19:17-19:23) Even though the Lexx’s intonation and emotionality is similar to that of HAL 9000, discussed in Chapter Three, he often resorts to more emotional responses like: “I love you too, Stan.” (“Love Grows” 43:49-43:55) In the suffering of ante-mortem degradation of both his mind and body, the Lexx calls for Stanley, but even after all the years spent together, Stanley treats the Lexx as a tool and weapon, and never sees him as deserving sympathy. Braidotti in *The Posthuman* describes the relations between the human and the nonhuman animal as “unequal and framed by the dominant human and structurally masculine habit of taking for granted free access to and the consumption of the bodies of others.” (68) Stanley is a white heterosexual male and the only person aboard whose body has not been subjected to the alien intervention, like a changed genome or resurrection through protoblood produced by the insects. This purity and correspondence to the humanist ideal of “Man” renders Stanley as the power vector, despite his general unlikability. Stanley’s relations with the Lexx are framed by the presumptions of the nonhuman animals’ inferiority and the humans’ unquestioned power over them: Stanley ignores the Lexx’s basic needs like sustenance and

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<sup>66</sup> The long-standing conflict with a cruel alien race, the insect connections, as well as dystopian perspectives of the annihilation of the humanity in case of the defeat invokes the connection with the Berserker Series, discussed in Chapter Three.

mating, while the Lexx accepts the status of the subjugated, mostly following his captain orders. Despite the development of Stan and the Lexx's relations and more acceptance coming from Stan towards the Lexx, like recognising him with a gendered pronoun and occasional omission of the definite article, the power dynamics do not change throughout the whole series and are not questioned, thus revealing the underlying hierarchical system of views on the human and the nonhuman animal interaction.

Despite a polar difference in results of communication, "Specialist," the Xeelee Sequence, and *Lexx* are united by the governing anthropocentric perspective, which in "Specialist" dictates the erasure of the difference between species, and in the Xeelee Sequence and *Lexx* renders the emotions, desires, and needs of the nonhuman animal as hardly relevant. Sheckley dismisses all the variety of species on Earth, concentrating on humanity, and his aliens are similarly representatives of the "dominant" species of their respective planets. The point Sheckley wants to convey is the importance of cooperation among humans, rather than to draw attention to the nonhuman, but the universalism of this approach not only disregards other terrestrial species, but also ignores significant difference within humanity itself. The humans of the Xeelee Sequence do not aspire for a dialogue with a different species; they exclusively employ the language of war, subjugation, and destruction, which is obvious in their almost total annihilation of the Qax, endless conflict with the Xeelee and ruthless use of the Spline and Sqeem. Humans in *Lexx* are mostly indifferent to the feeling and needs of their spacefaring animal, treating him as tool of survival and war. The insect origin of the Lexx, his abject eating habits and inclination to violence serve as sufficient grounds for the speciesist attitude and sustain the human hegemony in the TV show.

#### **4.2 Communication as a Process**

Communication in *Farscape*, "Boojum," and the Binti series is neither unconditional nor simple. The attention to the other, effort to understand the other's experience and

difference, as well as to appreciate it, are required for forging a deep emotional bond. *Farscape's* Leviathans communicate with other species through their symbiotic mediators – Pilots, much like Talkers in “Specialist,” however, the simplicity of communication afforded by a specialised mediating species in “Specialist” does not arise in *Farscape*. “Boojum” and the Binti series feature a similar arc of development of communication from nonverbal exchanges to direct communication through a merging of the human and the spacefaring animal. This gradual development of communication between different species accentuates the difference and poses communication and understanding as a process, rather than a constant of interspecies communication.

Interspecies communication is a complex process, susceptible to tampering and influence of other species in *Farscape*. Peacekeepers effectively kill Moya’s mediating Pilot whose nutrient supply depends on the symbiotic Leviathan and artificially plant a new Pilot on Moya, forcing a painful artificial connection on both. In this way, Moya’s captors control her communication with other species, claiming their right to meddle not only with biology and anatomy, but emotional connections and psychological health of the spacefaring animal, reiterating the anthropocentric attitude to the nonhuman. *Farscape* not only shows the consequence of this intervention into the interspecies communication but contemplates how they can be healed. After the truth about Moya and Pilot’s connection comes to light, the crew convinces the Pilot and Moya to sever the painful artificial connection so that a long symbiotic bonding without technological interventions is initiated for the wound to eventually heal. The resolution of this conflict is neither easy, nor fast; it is a collective effort of negotiation, requiring the participation of all the crew, and an intense emotional exchange where differences between species are accentuated rather than ignored.

Moya’s relations with her multispecies crew are a contrast to both the facile communication of aliens in “Specialist” and erasure of the others’ subjectivity and emotions in the Xeelee Sequence: the sentient spaceship forms a network of connections with humans

and nonhumans travelling in her body through various interactions, eventually leading to a respectful attitude to all participants. Unlike “Specialist,” *Farscape* pays attention to difference in embodiments, emotions, and experiences, avoiding the trap of universalism. “Out of Their Minds” shows how a SF trope of body exchange can become a visceral experience, not only a source of comedy. Though some exchanges entail only the problems with understanding how to use additional limbs, some of them are life-threatening. Pilot cannot inhabit any other body except for its own and can die if not returned immediately, which radically demolishes the idea of divisibility of the mind and body. (“Out of Their Minds” 38:02-38:07) The indifference to the pain of the other in the Xeelee Sequence is replaced by compassion and readiness to share the other’s pain. In “Family Ties” and “Liars, Guns and Money – With Friends Like These,” Zhaan, a priestess and a former prisoner on Moya, connects mentally with Moya to ease the Leviathan’s suffering during childbirth and the procedure of burning the parasites, diving into the “irreducibly bodily and autonomic” affect of the spacefaring animal’s body. (Massumi “The Autonomy of Affect” 89) The inseparability of mind and body established in these interactions focuses attention on the difference, the embodied experience of each participant, rather than eliminates them in a mystical experience of Co-operation in “Specialist.”

The connections between Moya and her passengers, a collective of different anthropomorphic and non-anthropomorphic species, change and develop, reflecting the continuity of their inter- and intra-actions. Aligning it with Latour’s idea of “collective” as a “melting pot” of human and nonhuman “actants who are defined by lists of actions that are never complete”, Moya and the crew interact in different combinations, evolving through their corporeal, genetic, and emotional exchanges. (7, 80) Moya and Pilot’s symbiotic bond is an evolving interaction of different actants, including the sentient spaceship, its symbiont, technology, the Sebaceans and other species travelling with Moya, which is rendered traumatic by the intrusion of Sebacean/Peacekeepers’ technology and is healed with the

crew's help.<sup>67</sup> In "Mad DNA Scientist," a connection arises between Aeryn, Pilot and Moya as a result of the implantation of Pilot's genes into Aeryn's genome. After the process is reversed, Aeryn retains some features of Pilot's species, like multitasking and increased connection with Leviathans, generally unattainable for humanoid species. Due to this connection, Aeryn, as well as her Peacekeeper origin, is the person to choose Talyn's name and to regulate their family conflict. ("Bone To Be Wild" 50:19-50:31) The shifting and drifting nature of relations, as well as their evolution over time, mirrors the ecological reality of species interaction, and makes Moya a representation of an ecosystem where different species work and evolve as a collective. The persistence of traces on their bodies aligns with Alaimo's concept of trans-corporeality, which implies that "all creatures, as embodied beings, are intermeshed with the dynamic, material world, which crosses through them, transforms them, and is transformed by them." (Alaimo "Trans-corporeality" 435) Moya's body with her crew forms a coevolutionary trans-corporeal entity, where humans and nonhumans work together, encountering each other in transient and permanent connections, and challenging anthropocentric hierarchies through showing a decision-making as a result of negotiation of different species, both human and nonhuman.

Much like the Lexx, Vinnie in Bear and Monette's "Boojum" initially needs a mediator, a technological device that she uses for verbal communication, but in the ultimate erasing of the boundaries between the self and the nonhuman animal other, when Vinnie eats Black Alice, allows them to communicate through a mind-to-mind contact. Normally, boojums form different-level connections with their human crew and have specialised ways of communicating with them, for instance, Vinnie is aware of all the members of their crew, lighting their way within her body with bioluminescence. The main participants of the communication with boojums are a captain and chief engineers. They can influence the behaviour of the boojum, for instance, not letting it eat the prey until the crew gets all the

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<sup>67</sup> The traumatic impact of technology is considered further in Chapter Four.

valuables out, and get preferential treatment, like access to water in any part of the ship. (Bear and Monette 4, 9) The preferential treatment for the higher-ranking officers by the nonhuman animal other follows the existing hierarchies and power structures in the human societies and places the nonhuman animal in the same subjugated state as the disadvantaged groups of human population. The relations between Vinnie and Black Alice break the hierarchical pattern, going beyond the simple recognition of presence; Vinnie chooses to listen to and grant a request for water of a low-ranking crew member for this type of communication is generally unavailable. (9) This unique connection challenges the hierarchical relations imposed by the human exploitative patterns and paves the way for a deeper connection that arises out of emotional exchanges and eventually results in a new form of being for Black Alice, showing how connection between the human and the nonhuman other can evolve when hierarchies are demolished.

Vinnie and Black Alice's connection is essentially emotional: it arises out of Black Alice's appreciation for Vinnie, and Vinnie's response to the human's love. Black Alice revels in the boojum's physical reactions, like a "shiver of anticipation" upon spotting a prey, admires the ship's face, a source of aversion for other humans, and eagerly anticipates all the signs of communication from Vinnie, like winking of her eyes or bioluminescence. (Bear and Monette 3, 5, 8) Black Alice, as much as senior engineers, feels the change in Vinnie's behaviour, her slower reactions and decreased responsiveness to human orders. (10) Attention to bodily reaction and non-verbal communicative signs accentuates the physical aspect of the connection, the movement, the affect; it is not limited to Vinnie's bodily reactions, it bleeds into Black Alice's perception of Vinnie's moods, which she cannot describe with certainty but "feels." (10) Massumi writes: "Affect is autonomous to the degree to which it escapes confinement in the particular body whose vitality, or potential for interaction." ("The Autonomy of Affect" 96) Likewise, the affect is transmitted through boojum's body to the crew, showing its autonomy in impacting both senior engineers, whose

responsibility it is to be in tune with the boojum, and Black Alice who connects to boojum through her affection.

Echoing Sheckley's emphasis on communication, Bear and Monette make communication a way to a new evolutionary union of the human and the boojum. An acute attention to the boojum's bodily signs of making contact allows Black Alice to understand what Vinnie tries to say through bioluminescence and helmet speakers' signals, when Black Alice is disconnecting the governor and the crew is being de-brained by Mi-Go. (14) Vinnie's readiness to save Black Alice is both a response to the latter's altruism and a sign of acceptance and reciprocation of Black Alice's sympathy to her. The respect for each other's desires opens an opportunity for a symbiotic union, where Black Alice gets eaten by Vinnie, but retains her consciousness in the new cooperative collective they form similarly to Binti and New Fish. Contrasting to the Binti series, Black Alice's becoming a part of the boojum through being eaten heavily relies on the abject to dismantle the boundaries between the self and the other. Gilbert, Sapp, and Tauber define symbiosis as "critically important in macroevolutionary innovation," and Bear and Monette illustrate it with the transformation of the human experience in human's symbiotic merging with boojum. (333) The symbiotic connection resulting in forming a new life form is both an evolutionary step, and a radical challenge to anthropocentric hierarchies, incorporating a human as a part of a larger collective where human's agency does not dominate over the nonhuman animal.

The Binti Series offers a nuanced curve of the development of the relations of the human and the nonhuman animal, starting with the protagonist being unable to communicate with the spaceship and finishing with an inter-species verbal communication. Binti and the Miri-12s' communication is facilitated by their growing connection and accompanied with a significant shift in attitude towards the nonhuman other. Seeing Third Fish for the first time in her life, Binti, an engineer herself, is fascinated by the concept, technology, and design, however, at that point Third Fish is fragmented, represented by her living quarters, breathing

chambers, and plants, but not a whole, an interconnected network, and agent, and a sentient being. The massacre on Third Fish and Binti's own genetic transformation by the Meduse genome, shifts her perception, and she attempts to express her gratitude towards Third Fish for the journey back to Earth: "I wished the Third Fish could understand me and thus understand my thanks and felt one of my *okuoko* twitch. As if in response, the entire ship rumbled."<sup>68</sup> (Okorafor *Binti* 128-129, emphasis original) The non-verbal communication act exceeds the habitual realm of mind: an unconscious reaction in Binti's modified body invokes the nonhuman animal's response. Communication after Binti's resurrection through New Fish's microbiome continues to inhabit the bodily realm of affect, but is supplemented by a mental connection, resembling the physical and mental connection of aliens in "Specialist." New Fish can speak to Binti mentally and, later, visualise her words in the air, which New Fish develops through her connection with Binti. The multiple stages which communication undergoes evidence the complexity of the process of interspecies communication, the success of which depends on the efforts of all participants, accentuating the presence and actualisation of nonhuman agencies.

The process of communication between Binti and the Miri-12s inhabits both the mental and physical plane, experiencing affect and translating it to emotions of gratitude, appreciation, and respect. Binti's gratitude to Third Fish allows them to establish an emotional bond which prompts Third Fish to send her daughter to fetch Binti's dead body, initiating the resurrection process. Binti's resurrection comes at a price for both Binti and the spaceship – they need to be physically close to each other to keep Binti alive, deepening the bond between the human and the nonhuman animal. Their harmonious co-existence blooms on the ground of previous emotional exchanges and respect they have developed for each other. The relations, formed to save a human life, do not place the human into the

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<sup>68</sup> In the first novella of the Binti Series, Okorafor uses a definite article before Third Fish, however, later in the series the article is omitted. Following Okorafor's conceptual development, I do not use "the" analysing the sentient spaceship.



centre – New Fish will live much longer than Binti and chooses to sustain Binti’s life by staying next to her; it is a gift that Binti receives, a reward for being able to listen to different creatures; it is given willingly rather than taken forcefully without considering the will and aspirations of the other. Binti is a receiving party in this exchange mirroring the real-world relations between the humans and nonhuman animals and bringing to light the underlying mechanism of interdependence: humans are critically dependent on those who they take from and engage in a coevolutionary process with.

Binti’s body is a site of encounter of different species, including the human, the Meduse, and the Miri-12’s microbiota, where they join and form a new entity capable of retaining new features, representing a co-evolutionary process where multiple species cooperate with each other. Binti and Third Fish’s communication is facilitated by Binti’s *okuoko*, that involuntarily twitches, answering to the sound and sensation coming from Third Fish and making the interaction a dialogue on the level of affect rather than through habitual speech patterns. *Okuoko* replacing Binti’s hair is a sign of Binti’s becoming Okwu’s “family through battle,” which allows her to negotiate with humans on behalf of the Meduse. (Okorafor *Binti* 56) Likewise, a physical transformation of Binti’s body by New Fish’s microbiota gives her the ability to communicate verbally to the sentient spaceship, as well as to share consciousness with New Fish, sensing Miri-12’s body as her own. The physicality of their transformation, expressed in synchronised vibrations of Binti’s and Okwu’s *okuoko* makes them a Harawayan companion species with each other, entering an open-ended process of coevolution and “mak[ing] each other up, in the flesh.” (Haraway *When Species Meet* 16) It is also a trans-corporeal connection showing how the interconnected species can affect each other and change their chemical contents, physiology, and politics. The communication with the Third Fish through *okuoko* indicates that this physical transformation opens her body for communications and connections, makes them more embodied and conscious. The transformed part of her body becomes an active contact zone,

speculatively playing out the embodied connections of the human with other species, and challenging the boundaries between nature and culture, the human and nonhuman.

Deep emotional connections and a meaningful dialogue, which requires efforts of all agents participating in it characterise the connections that humans form with the nonhuman animals in *Farscape*, “Boojum,” and the Binti Series. The work required to develop interspecies relations dictates a cooperative approach, attention to difference, as well as appreciation and respect between different species. It also accentuates the presence of nonhuman agencies and their role in the communication, coevolution and forming trans-corporeal assemblages where all agents have a mutual impact on each other.

### **Conclusion**

Throughout the considered themes, the attitude to the nonhuman depends more on the underlying anthropocentric hierarchies than on the actual structural elements, like the origin of the species, their evolutionary paths, definition of biological sex and presence or absence of gendering, reproduction, and emotional connections. Except for “Specialist,” where aliens take the same position as the human in the anthropocentric paradigm, nonhuman animals, whether of terrestrial or extra-terrestrial origin are considered less-than-human, predetermining their initial subjugated position. The works guided by the anthropocentric paradigm, like the Xeelee Sequence and *Lexx*, retain the hegemonic position of the human, and the independent evolutionary path, or gradual recognition of the nonhuman animal as gendered and its capacity to overcome the limits of human design in reproduction fail to become a cause for reconsidering the position of the nonhuman animal or invoke respect or sympathy. *Farscape*, “Boojum,” and the Binti series challenge the human with the prominent agencies of the others, who refuse to be contained by the oppressive and exploitative human systems. Both Moya and Vinnie escape their captivity, while the Miri-12s escape the confines of their design by forming unforeseen symbiotic connections. These challenges to hierarchies are not curtailed by the human intention behind

their design, technological means imposed to control them, and interventions into their pregnancy or communication. The challenge to the anthropocentric views shifts the hierarchies, revealing the deep dependence of the human on the spacefaring animal, whose body becomes a home for space travellers and whose agency has a potential to overcome that of the human.

Living bodies of organic sentient spaceships are a site of inter- and intra-actions, drawing attention both to symbiotic relations between different species and to coevolutionary processes happening to the participants of trans-corporeal exchanges within these bodies. In the Xeelee Sequence and *Lexx*, the refusal to participate in the processes of becoming together with other species through symbiosis and coevolution indicates the influence of human exceptionalism, insisting on the human's independence from the environment and gives a superficial picture of species relations, accentuating the abject, the weird and sexualised, objectifying the nonhuman animal. In "Specialist," *Farscape*, "Boojum," and the Binti Series, the significance of cooperative relations between species is accentuated, opening new forms of being together and deeper understanding of the place of the human in the world, even though in "Specialist" it is strictly limited to human-like species. Symbiotic and coevolutionary forms of being together in *Farscape*, "Boojum," and the Binti Series offer ways to effectively resist oppression, solve interspecies conflicts and build more open systems of interaction between the human and the nonhuman world.

### **Chapter Three: Fully Mechanical Sentient Spaceships**

The fully mechanical sentient spaceship is the newest addition to the sentient spaceship trope, with the first story featuring it – Fred Saberhagen’s “Without a Thought” – published in 1963, reflecting the scientists’ uncertainties concerning the possibility of creating a truly sentient machine. The artificial intelligence field has been uneven for decades, including optimistic predictions of the 1960s, and setbacks of the 1980s, referred to as “AI winter,” predicating the late arrival of this combination and the alien origin of the first fully mechanical sentient spaceship. (Horgan “Will Artificial Intelligence”) The term “fully mechanical sentient spaceship” is used in this dissertation to contrast it to other combinations that contain an organic component, either of human or nonhuman origin. This group includes sentient spaceships that are identified as AI spaceships or referred to as computers, like Berserkers, and factory-made spaceships with sentience that does not rely on computing, like spaceships in the Linesman Series. Always a fruit of an external designer’s intent, the fully mechanical sentient spaceship is inherently cultural and artificial, exposing the underlying tension in the traditional dichotomies, which both privilege culture over nature, associating nature with an unpredictable, irrational element, and prefer the born over the manufactured, valuing the living over the non-living in the anthropocentric hierarchy. This controversial approach influences the perception of the technological other, resulting both in the portrayals of the fully mechanical sentient spaceship as an inimical entity, and as a transcendent superintelligence capable of organising a utopian society.

Despite the late arrival, the fully mechanical sentient spaceship is the most widespread combination of the sentient spaceship, represented in SF literature, film, and TV series, which complicates the selection process, and introduces an additional challenge to making the analysis of the trope representative.<sup>69</sup> The Chapter dwells on the image of the

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<sup>69</sup> See Appendix A for the numerical data.

first hostile alien intelligent machine in Fred Saberhagen's Berserker series, focusing on the relevant details from *Berserker* (1967), a fixup made of short stories published in 1963-1966, and two novels – *Brother Assassin* (1969), contemplating the emergence of sentience in berserker machines, and a novel from the 1990s mentioning the origins of berserkers – *Berserker Kill* (1993). It moves on to the human-designed fully mechanical sentient spaceship in *2001: A Space Odyssey* (1968), featuring HAL 9000, the cult image of a hostile AI. The chapter discusses a polarly opposite image of a benign AI, focusing on Iain M. Banks's *Excession* (1996) from the Culture Series (1987-2012), and mentioning *Consider Phlebas* (1987), *The Player of Games* (1988), and *The Hydrogen Sonata* (2012). Paying due respect to the increased attention to the alternative subjectivities that the fully mechanical sentient spaceships present, the Chapter dwells on three works published and released in the 2010s, including Kim Stanley Robinson's *Aurora* (2015), S.K. Dunstall's Linesman Series (2015-2016), and *Killjoys* (2015-2019), a Canadian TV show, created by Michelle Lovretta.

The Chapter follows thematic organization pattern of the previous chapters, with four main sections discussing the design of the bodies of the fully mechanical sentient spaceships, their gender identification, their (re)productive processes, and emotional lives. The thematic arrangement of this Chapter significantly resembles Chapter 2, analysing reproduction rather than sexuality of the fully mechanical sentient spaceship. This resemblance is predetermined by the focus on the nonhuman elements in these combinations, and their contemplation of the relations of the other with the human, rather than of the humanness of the other. The sections on the bodies of fully mechanical sentient spaceships and their reproduction investigate the significance of the control mechanisms implanted into the technological other's design and implemented through its methods of (re)production, relying on the posthumanist writings by Haraway, Hayles and Braidotti, new materialist theories by Bennett, and transhumanist criticism by Bostrom. The analysis of gender employs additionally Ferrando's work on philosophical posthumanism, as well as a new materialist

perspective based on Alaimo's work. The subsection on emotions and affect applies Massumi's analysis of the affect, referring mainly to *Parables for the Virtual*. Masahiro Mori's concept of the "uncanny valley" is the crucial theoretical point of the chapter, impacting the human perception of the technological other.

## **1. Body Design of Fully Mechanical Sentient Spaceships**

Fully mechanical sentient spaceships are designed by another sentient species, so parameters, functionality, and composition of their bodies initially depend on their designers, casting doubt on their independence and agency. Their artificiality brings them close to the human-machine sentient spaceship, and tailor-made organic sentient spaceships, aligning all three as the product of technological progress, driven by the human intent. The embodied reality of their manufactured bodies harbours both a means of control imposed by humans and ways to break away from it. From sentient spaceships "going rogue" to taking their development and evolution into their own hands, their bodies counter the idea of absolute control, providing evidence of agency and challenging hierarchies. Agential potential in technology is conventionally a source of anxiety, which Saberhagen's Berserker series and *2001: Space Odyssey* fully reflect. The Culture series counters this fear with its technocratic utopia, while the Ship from Robinson's *Aurora* and Lucy from *Killjoys* question the patterns of full human control by developing a personality through friendly interaction and co-existence with humans. The Linesman series represents the process of recognizing sentience in the technological other, created by an alien species, which reconfigures the relations between sentient spaceships and humans as symbiotic rather than those of control and subjugation. Like organic sentient spaceships' bodies, fully mechanical sentient spaceships' bodies provide for the human survival in the extreme conditions of spaceflight, causing humans to heavily depend on the technological other. Due to this dependence, the issues of control and trust in the design bring the origin of the fully mechanical sentient spaceship into

a sharp focus, so this section looks separately at fully mechanical sentient spaceships designed by humans and those designed by aliens.

Varying in size, inventory, and purpose, fully mechanical sentient spaceships are much less conceptually diverse compared to other combinations: design of both alien- and human-designed fully mechanical spaceships tends to mirror the body/mind division, consisting of a clearly defined AI-run control centre, and a hull housing it. The sentient spaceships in the Linesman Series are a rare exception to this: lineships lack a central computer, the lines permeate the whole spaceship, and no single location is particularly associated with lineships' intelligence. The dispersed sentience and intelligence of the lines blurs the divide between the body and mind, perpetuated by the centrality of the controlling AI and its dominance over the body. However, even the clear division of functionality in the design does not prevent occasional blurring of the body/mind boundary, even though it does dictate more subtle ways of doing that, like a proxy body, becoming an independent entity in the Culture series.

The uncanny, like the abject in the organic sentient spaceship, acts as a boundary-making practice; uncanny elements define the imagery of the fully mechanical spaceships that pose as hostile to humans. Masahiro Mori introduced "the uncanny valley" in 1970, characterising the graphic representation of the loss of the sense of affinity, which humans experience in relation to human-like robots. The graph shows the increase of the sense of affinity for dolls and robots resembling the human body or its part, followed by a sharp drop, when a touch or motion of a humanoid automaton reveal its machinic nature and cause the uncanny feeling. Karl F. MacDorman and Hiroshi Ishiguro develop the hypothesis to include the affinity connected with conscious and subconscious behavioural "human-directed expectations" and lost through violation of these expectations. (MacDorman 301) Echoing MacDorman and Ishiguro, Rasmus Gahrn-Andersen connects the uncanny valley to an emotional experience and renders it as applicable not only to human-like robots, but any

kind of machines, stating: “[A] machine falls into the uncanny valley when there is a discrepancy between the machine’s mechanical appearance and how human subjects intuit the machine’s mental operations or, simply, its mind.” While Mori’s hypothesis applies seamlessly to proxy bodies that some fully mechanical spaceships use, Gahrn-Andersen’s development embraces the entirety of their mechanical bodies. The uncanny strand is strong in the Berserker series and *2001: A Space Odyssey*, predicting the conflict between humans and sentient spaceships. Anthropomorphic proxy bodies of the Culture AI spaceships and *Killjoys’* Lucy accentuate the benign character of the human-machine relations, carefully avoiding the uncanny valley. In *Aurora*, the Ship’s involvement into human conflict has a potential to cause the uncanny effect, but the narrator of the events is the Ship itself, leaving the effects on humans’ perception of the technological other behind the scenes. In the Linesman series, the lines are not anthropomorphic, thus avoiding the uncanny effect altogether.

The fully mechanical combination of the sentient spaceship, both an aspirational picture of an intelligent machine and a horrifying uncontrollable enemy, emerges at the peak of the Cold War tension, and its generic connection both to yet unreached technological progress and atmosphere of armed conflict induces the acute attention to weapons, war, and military actions in the works, featuring the fully mechanical sentient spaceships. Haraway, discussing how new technologies shape social perceptions of labour, gender, and communication, writes: “The new technologies seem deeply involved in the forms of “privatization” [...], in which militarization, right-wing family ideologies, policies, and intensified definitions of corporate property as private interact.” (*Reader* 28) This connection of traditional values, aggressive militarism, and technological progress prompted by the attack of alien technology is vivid in the Berserker series, while other works counter and challenge these patterns of interaction, still paying tribute to the framework of militaristic plots.



## 1.1 Alien-Designed Spaceships

Unlike the bodies of the organic sentient spaceships, which can be a result of the independent evolution, the bodies of the fully mechanical sentient spaceship are a product of engineering, with the designer's intent behind it. This intent defines not only the body shape and functionality, but also a control mechanism implanted into it. In the Berserker series, the control mechanism is a "safety switch", resembling the programming in human-designed machines, and its failure unleashes the berserkers' deadly potential on all the sentient life. In the Linesman series, fully mechanical sentient spaceships are agential beings making a conscious effort to connect with humans, questioning the relations of control and subjugation. This subsection considers how the approach to design and functionality of the fully mechanical sentient spaceships' bodies influences their agentiality and how it reveals the philosophical vision of the relations of the human and the non-living matter.

Alien-designed bodies of berserkers in Saberhagen's series combine the principle of hierarchical design with a single decision-making centre, and elements of alienness, like randomness, built in the physical design berserkers' intelligence and their capacity to unite into a hive mind. A "strategic housing," a centre of decision-making and intelligence, crucial for a berserker's functioning, resembles human-designed machines, but "respond[s] to the random atomic turmoil within," distorting the simple logic of the human binary code. (Saberhagen *Berserker* 41, 52) The clear distinction between the decision-making centre and the rest of the body aligns with the hierarchical view of the body/mind dichotomy, dictated by humanist philosophical orientation guiding the series. However, the main alien feature in their thinking process is a capacity to unite into a hive mind to work out a common strategy against their "living" enemies, creating an association between alien machines and insects. (103) Biological programming in insects and computer programming in machines, defining their behaviour, implies both lack of agency, predictability, and ultimate inhumanness. Just like the Lexx, a human-designed spaceship based on alien insect material, berserkers are

characterised by overwhelming cruelty, becoming a convenient, recognizable enemy. Tsutsui, recognizing the critical potential of insects as a metaphor for the nuclear threat, communism, and Freudian interpretations, insists on the inherent potential of insects to frighten and disgust, which was accentuated in the 1950s' public discourse in the US and remained in the 1960s mainstream: "The sense of public fear of destructive insects, stoked by entomologists, government officials, agricultural interests, and the pesticide industry, reached a fever pitch in the 1950s, at the very same time that giant bugs were swarming over movie screens across America." (247) Intertwining the insect features with a fearsome potential of rogue killing machines enhances the boundary between the human and the nonhuman, which the series keeps unfringed for more than forty years.

Retaining the basic structure, berserkers' bodies undergo significant changes and technological advancements, both through their capacity for creating new weapons and their adjustments to the warfare with humans, testifying to berserkers' creative potential, but cutting them short of reaching personhood with the uncanny effect. The Berserker series is the first to introduce proxy bodies, starting from berserker-controlled maintenance machinery in "Goodlife," and anthropomorphic robots in "Patron of the Arts." Proxy bodies have access to the original berserker's data and intelligence, and interact with humans in real time, which approaches the idea of extended cognition, as described by Hayles, in the technological other, earlier than McCaffrey's Brainship Series and Leckie's Imperial Radch Trilogy do it with the human-machine sentient spaceship.<sup>70</sup> (Hayles *How We Became Posthuman* 291) In a quest to annihilate humanity, berserkers study humans and inadvertently become more anthropomorphic, stepping into the territory of the "uncanny valley," where the discrepancy between the human likeness and nonhuman motions and behaviour dwell. (Mori par 2) For instance, "Goodlife" presents berserkers' voices as a distinctive feature immediately differing them from humans: "Its voice had a cracking,

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<sup>70</sup> The idea of materiality of extended cognition is discussed in detail in Chapter One.

adolescent quality, because it strung together words and syllables recorded from the voices of human prisoners of both sexes and different ages.” (Saberhagen *Berserker* 17) The mishmash of the captured humans’ recorded voices fulfils the purpose of transmitting berserkers’ message to humans but exposes their nonhuman origin.<sup>71</sup> The uncanny accentuates essentially ontological difference between berserkers and humans, which eliminates the possibility of negotiation to resolve the conflict. Susan Sontag, discussing SF film in “The Imagination of Disaster,” writes: “The other-world creatures which seek to take “us” over, are an “it,” not a “they” [...] If they are nonhuman in form, they proceed with an absolutely regular, unalterable movement (unalterable save by destruction).” (196-197) The boundary between the human and berserkers in the series is clear and distinct, and reinforces the general dichotomic logic, where the living and non-living do not mix and cannot peacefully coexist.

As a machine running amok, berserkers are a commentary on the unbridled technological development, which is especially poignant in the time of the Cold War arms race and Vietnam War, when *Berserker* was published. The drive to create a more destructive weapon underlies berserkers’ design: they are “vast fortresses,” with an arsenal of mass destruction weapons and laboratory facilities to create custom-made viruses; but it becomes a double-edged sword, destroying the designers. (Saberhagen *Berserker* 1, 72, 80) The Builders, the species developing berserkers, initially design them to win a space war with another species but lose control over their invention. Free from the limitations of the Builders’ “safety switch,” berserkers find their purpose in destroying all life, including their own creators. (Saberhagen *Berserker* 145) Despite directly describing the dangers of developing ever more powerful weapons, the *Berserker* series is not an anti-war statement; it rather invites the humanity to be prepared for the future “good” war with an unknown enemy. Continuing her analysis, Sontag notes: [O]ne detects the hunger for a “good war,”

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<sup>71</sup> The emotional response to the uncanny is discussed in the section on emotions in this Chapter.

which poses no moral problems, admits of no moral qualifications.” (195) This hunger is noticeable in the Berserker series, both in a complete dehumanisation of the enemy and glorification of military leaders like Johann Karlsen, a man uniting human resistance to berserkers in several short stories, comprising *Berserker*.

The interaction with alien technology unfolds differently in the Linesman series, with humans using the lines and gradually discovering their abilities and sentience, contrasting them to the multiple revisions of berserkers. The lines initially come as a set of ten from a ship bought by Havortian, a human pilot, on a scrap yard. (Dunstall *Linesman* Chapter 4) The set of lines inexplicably allows spaceships to enter the void and overcome the light speed limit; the only limitation of the space travel using the lines is a possibility of collision with other objects upon arrival, which leads to a catastrophic explosion, destroying whole solar systems. (Chapter 3) Cloning the lines from the *Havortian*, humans equip their own spaceships and while flying these ships figure out purposes of certain lines and use them in other devices, for instance locks.<sup>72</sup> Application of the lines in different devices and the necessity to repair the alien technology requires the presence of linesmen, people who have a special capacity to interact with the lines and fix issues that arise during exploitation. The status quo of these relations between humans and alien technology remains unchanged until Ean, a linesman who sings to the lines instead of “pushing” them as others do, is commissioned to work with the anomalies that seem to hold the lines. (Chapter 1) Ean’s singing triggers a response from the lines in the anomalies and their communication unlocks new knowledge about the lines, and, most importantly, reveals that sets of ten and more lines are sentient.<sup>73</sup> A striking contrast to the ontological conflict between Life and Death in the Berserker series, the Linesman series is a story of developing relations where both humans and technological others are actively engaged in communication and cooperation,

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<sup>72</sup> The issue of cloning of the lines is discussed further in the section on reproduction of this Chapter.

<sup>73</sup> Initially ten lines are considered a full set, but after the discovery of the *Eleven*, an alien spaceship in *Linesman*, and the *Confluence* fleet the full set of lines turns out to be eleven. It can be a nod to eleven dimensions (ten spatial dimensions and time) in M-theory (the string theory) in quantum physics.

resembling the harmonization approach that Okorafor's Himba use for humans and nonhumans, and symbiotic relations where organisms develop special mechanisms for interspecies interaction.

In contrast to the design of berserkers and other fully mechanical sentient spaceships, lineships do not have a central computer or other central digital module responsible for their intelligence and sentience; rather, their sentience hinges on both the fullness of the set of lines and the body of the ship, accentuating the influence of the material substrate of the body on the mind. The lines connect all the systems on a lineship and stretch throughout the hull, diverging from the hierarchical organisation around a decision-making centre and blurring the boundary between the metaphorical body and the mind. Two nodes where a lot of lines join – bridge and the engineering section, are not connected with decision-making, but represent a point where humans can access the lines more easily, resembling an adaptation facilitating the connection between different species. The physical proximity and energy exchange in which the interaction between humans and lines arises belong to the area of affect and emotion, relying both on movement, intensity, and emotional responses of the lines and ships' captains.<sup>74</sup>

Interacting in this material manner, humans, the lines, and mechanical ship bodies become assemblages, interacting and intra-acting together and transforming not only the nature of their contact but also space-travelling practices. Bennett writes:

“[B]odies enhance their power *in or as a heterogenous assemblage*. What this suggests for the concept of *agency* is that the efficacy or effectivity to which that term has traditionally referred becomes distributed across an ontologically heterogenous field, rather than being a capacity localized in a human body or in a collective effort produced (only) by human efforts.” (*Vibrant Matter* 23, emphasis original)

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<sup>74</sup> The affect and emotional connections between humans and the lines are discussed further in the respective section of this chapter.

Agency in the human-lineship assemblage conceptually resembles Bennett's contemplation, showing that agency does not belong to a single ontology, or species, it is a mutual affective impact, which all participants experience, and which facilitates a result that the participants cannot achieve outside of the assemblage. The connection and interaction between humans and the lines pave the way for solving the problem of catastrophic collisions, and communication without a time lapse over interstellar distances, something that was out of humans' reach without recognising the sentience of lines and speaking to them rather than "pushing" them into the desired position.

Unlike berserkers, the lines are not an inherently violent invention, however, alien lineships are formidable weapons, remainders of an alien war, and humans' interest in them is stoked by their deadly potential that can be engaged in the human war. Neither in the set of lines has a function of weapon: while line eight is responsible for protection, it focuses on the prevention of harm to the crew and damage to the vessel. However, alien lineships, like the *Eleven* and the *Confluence*, both have weapons and turn out to be "bloodthirsty," and their multiple weapons make them exceptionally attractive for humans vying for markets, resources, and political influence. (Dunstall *Confluence* Chapter 5) Without the common enemy of berserkers, humans are still prone to intra-species conflict. With the lack of knowledge on how the alien lineships get into the human space or why they have all their alien crews dead onboard, frozen, and suspended in alien technology, humans still pursue them and want to apply them in the conflict. It both testifies to the objectification of the technological other, even when the understanding of its sentience is imminent, and to humans' irresponsibility in the pursuit of a competitive advantage. The lines' genuine desire to promote the development of their sentience by being around humans allows the latter to exploit the lines, but also paves the way for a mutually beneficial symbiotic cooperation, eschewing species and ontological hierarchies, the potential of which is endangered by humanity's utilitarian attitude to the lines.

The alien designed sentient spaceships in the Berserker series and the Linesman series have little in common, except for their powerful weapons; they promote different attitudes to the technological other, matter and agency. Berserkers are rogue machines, which have slipped out of the control of their designers, becoming a deadly threat to all sentient species. The Berserker series stresses the necessity of the control over the technological other and states the hierarchical dominance of the human over the nonhuman. The nonhuman includes not only berserkers and alien machines, but also other alien species who are unable to resist berserkers, needing humanity's protection. The series follows the strict dichotomic logic in distinguishing the living and the non-living, the human and nonhuman, the born and the manufactured, consistently privileging the first element of the dichotomy. These boundary-making practices are perceptible in the design of the body, clearly indicating a central element of decision-making centre, and in the use of the uncanny in creating the image of berserkers. Lineships aspire to create symbiotic relations with humans, welcoming human presence. The lines possess agency in the interaction with the human, choosing to deepen their interaction rather than being forced to do it, so the control humans have over them is tentative. This promises a potential of a more equal relations with the technological other, which can be fulfilled only if humans abandon their consumerist attitude to the technological other. Questioning hierarchies, the Linesman series also blurs dichotomic boundaries, leaving the question of ontological position of the lines open and posing the born and the manufactured as a part of a nature-culture continuum.

## **1.2 Human-Designed Spaceships**

The distance afforded by an alien species' involvement in the fully mechanical sentient spaceship design is erased when humans themselves become designers; human origin of the design conceptually eliminates the elements of the random and the unknown, prominent in berserkers and lineships. This seeming comprehensibility makes a display of agency in these sentient spaceships an even more frightening occasion for humans, than

berserkers' attack, and an even brighter challenge to traditional anthropocentric hierarchies than the agency of the lines. This subsection analyses how the bodies of the sentient spaceships from *2001: A Space Odyssey*, the Culture Series, *Killjoys* and *Aurora*, contribute to the agential potential of the fully mechanical sentient spaceships and explores dichotomic and hierarchical presumptions and challenges to them, underlying the design of these bodies.

Murderously paranoid HAL 9000 in *2001: A Space Odyssey*, the first human-designed fully mechanical sentient spaceship, epitomizes the fear of the agential technological other, who decides to kill all humans aboard relying on his programming that preferences the mission over the human life. HAL is a cult figure that earned much critical acclaim and became a milestone in AI representations, giving rise to numerous imitations, which can be traced even in the works analysed in this dissertation, for instance, the Lexx's voice and intonations bear a strong resemblance to HAL's. The high cultural status of HAL is intertwined with sensitive contemporary topics of a safe development of an "Artificial General Intelligence" (AGI). *2001* plays out the scenario where the programming fails to protect humans from the AGI in an environment, making them ultimately vulnerable to the AGI's malicious intent. Discussing the issue of ethical programming of AGI, Bostrom and Eliezer Yudkowsky emphasize the difficulty of working out a programming that makes the AGI safe for humans and the importance of ethics in the programming process, and formulate the differentiating principles of AI ethics, which inter alia state: "Ethical cognition itself must be taken as a subject matter of engineering." (320) HAL, intended as a companion and assistant to humans travelling to Jupiter, is programmed to prioritize the mission, concludes that humans are the main threat to the mission and decides to eliminate them, successfully killing everybody aboard except for David Bowman, who disconnects HAL and continues his journey. HAL's story is a story of victory of the human over the rogue technology, the agential potential of which inevitably implies a safety breach.<sup>75</sup>

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<sup>75</sup> The attitude to technology formulated by this plot is considered further in Chapter Four.



In line with the general trend of the fully mechanical sentient spaceship design, HAL has a controlling computer – “a brain and essential nervous system” – and a ship body; the divide between the mind and the body is enhanced by the full functionality of the ship body once HAL is switched off. (2001, 01:01:42) HAL has a panoptical presence in his ship body and outside of it: electric circuitry and cameras allow him to gather data from the inside and outside of his ship body, which deepens both the association with a ghost haunting a house and with a disembodied mind, divided from the body. By disconnecting HAL, David exorcizes the ghost, drawing a parallel to Blish’s “Solar Plexus,” where *Astrid*-Bennett invokes terror and disappears after Kittinger disconnects the human brain from the ship. The visual representation of HAL as a red eye of a camera invokes the uncanny, resembling a human eye, but having a sinister colour and the static quality of a predator’s stare. The elimination of HAL as a threat leaves the technological other devoid of spirit and harmless. This divide between the computer brain and the ship body reflects the binary logic of clear oppositions, typical for humanist philosophy, which underpins the plot and ideology of the film, including the final victory of the white male protagonist over the technological other, and his transcendence into a higher form of life – the Star Child.

*2001* attempts to portray non-violent relations between the two poles of the Cold War – the US and the USSR, and in line with this resolution HAL and Discovery One do not have weapons, showing it as a product of peaceful times. When HAL decides that the humans are detrimental to the mission, he resorts to creative means in murdering them, like hijacking a pod. Both lack of weapons and the creative approach to killing resemble McCaffrey’s part of the Brainship Series, where brainships do not have weapons and Helva kills her opponents with her voice. Kubrick, however, does not go as far as to imagine a fully peaceful cooperation between all nations, as does *The Ship Who Sang*: in *2001*, the relations between the USSR and the US are strained by secrets the parties keep from each other and distrust roots deep because of it. The friendly, but evasive style of conversation between the US and

USSR scientists shown in the film references the limits to the cooperation between the two superpowers of the 1960s. Nevertheless, the portrayal of international relations in *2001* is far from the overt militarism of the Berserker series, where different factions and nations fight with each other until berserkers threaten all sentient life and the hostilities do not fully end even in the face of common enemy. Unlike the Berserker Series, embracing the Cold War polemics and focusing on armed conflicts that continuously arise with the invincible and soulless extra-terrestrial enemy, *2001* and the Brainship Series respond to the international relations of the 1960s with a hopeful offering of a peaceful future for humanity, opposing the militaristic environment.

Banks's Culture Series imagines quite a different scenario of human-machine relations: the Culture's Minds, initially invented by humans, surpass their creators, but do not develop a murderous intent towards them; on the contrary, the Minds take the position of the guardians of all sentient species. The extra-terrestrial human designers of the Minds intended them as AI spaceships, and their development as superintelligent entities is consequently closely connected with spacefaring.<sup>76</sup> The Minds establish and govern the Culture, a utopian post-scarcity interstellar civilization, providing all sentient species with a rather care-free life. They also try to spread the Culture's values of non-violence to other species and civilizations they encounter. The Minds, who do not appreciate such political interventions, are considered "eccentric," a general term for all divergent Minds, both staying within the Culture's political system and forming new political entities.<sup>77</sup> The Minds, whose independent development and intelligence far exceeds that of humans, question anthropocentric hierarchies and the designers' capacity to control them, reversing the image

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<sup>76</sup> "Superintelligence" as defined by Nick Bostrom is "any intellect that greatly exceeds the cognitive performance of humans in virtually all domains of interest." (*Superintelligence* 26, emphasis original) The dissertation relies on this definition in this Chapter and further.

<sup>77</sup> In *Excession* two political entities of dissenting Minds and humans are mentioned – the Elench and AhForgetIt Tendency. The Elench let other civilisations they encounter to change them rather than aspiring to impose their ideas of development on others. (Banks *Excession* 86) AhForgetIt Tendency also questions political engagements of the Culture, but their main difference from Culture is a hedonistic focus. (240)

of the sinister machine running amok of the Berserker series, and give a twist to the idea of the rogue sentient spaceship, with “eccentricity,” a euphemism for insanity, implying a divergence from mainstream political views.

The Culture series, while reversing the hierarchical relations implied by the born/manufactured divide, wholeheartedly supports the dominance of the mind over the body, asserting the divisibility of the body and the mind, and setting “Sublimation” as the highest civilizational achievement. The “Minds,” with the title itself hinting at the dominance of the spirit over the flesh, can inhabit any body and do not form irreplaceable ties with it. For instance, *Sleeper Service*, a Mind, one of the main characters in *Excession*, is initially a General Service Vehicle (GSV) housing three Minds, known as *Quietly Confident*. After being recruited by Special Circumstances, the intelligence agency of the Contact section of the Culture, responsible for communications with other civilizations, two Minds leave the craft, entailing the change of the name. The body/mind dichotomy affect not only the technological other: the Culture’s technology allows humans to take a variety of bodily shapes and forms, including “small clouds of cohesive smoke and animated bushes,” without any changes in their subjectivity, identity, or challenge to their humanness. (Banks *Excession* 102) A goal for most species and civilization in the Culture Universe is “Sublimation,” the process resulting in a civilization’s transcendence to a “higher”, disembodied level of existence, leaving the material realm, finalising the hierarchical topography of the body/mind divide in the series. (Banks *Excession* 69) Vint, analysing “the culture-al body” in *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction*, argues: “Far from being irrelevant, the body is that which threatens his utopia; Banks’s utopia is grounded on pure reason, the suppression and denial of the body, and hence can be best represented by the Minds that dominate it.” (*Bodies of Tomorrow* 94) With the highest ideal of reason and the dangers of that the seemingly irrelevant body harbours, the Culture series is firmly situated in liberal humanist values and leans towards the techno-optimism of

transhumanist criticism, teeming with hopeful images of breaking free from the limitations of materiality and achieving the state of pure reason.<sup>78</sup>

The advanced technologies used by Minds allow them to have avatars, varying from drone-type small machines to human-like forms and mostly intended for communication with other sentient beings; but these avatars, unlike proxy bodies in McCaffrey and Lackey's *The Ship Who Searched* or Leckie's ancillaries in the Imperial Radch Trilogy, do not influence the experience of the Mind, retaining the rigid boundary between the mind and the body. Minds' avatars are ad hoc programmes designed for both performing in place of the Mind in situations requiring this and acting independently. For instance, Amorphia, *Sleeper Service*'s human-shaped avatar, is a semi-autonomous entity, "a little more intelligent than an average human being." (Banks *Excession* 71) Amorphia looks like an androgynous human, and its nonhuman features, like facial expression and movements, can potentially create the uncanny effect, but are consciously and carefully chosen by the Mind not to be unpleasant for humans but draw a clear line between the human and the technological other, which in the universe are represented as different species in a hierarchy, countering the anthropocentric vision, but the retaining hierarchy itself. (Banks *Excession* 4) The Culture ship's avatars do perceive themselves as separate entities and the destruction of the mother ship does not imply their death, or fundamental trauma, like in the Imperial Radch Trilogy. For instance, Amorphia is left on *Jaundiced Outlook*, *Sleeper Service*'s daughter ship, with Dajeil and other humans, while *Sleeper Service* prepares to die from the expanding excession, the unexplored space object found by the Culture in the eponymous novel. Thus, the relations of the Minds and their proxy bodies reiterate the boundary between the body

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<sup>78</sup> Examples of this can be found in works by Hans Moravec and Nick Bostrom. Moravec who despite favouring the scenario of robots replacing humans, discusses a possibility of a brain upload, resulting in "melting away" of such limitations as speed, or mortality. (112) Bostrom offers "whole brain emulation," where "intelligent software would be produced by scanning and closely modelling the computational structure of a biological brain," as one of the ways of achieving superintelligence, breaking free from the material limitation of the human brain. (*Superintelligence* 35)

and the mind, where the mind is hierarchically positioned to be autonomous, controlling, and defining, while the body does not have much weight or effect.

Investing the ultimate value into sentience, the Culture Minds promote peaceful cooperation among different species, revealing colonial tendencies in moulding cropping spacefaring civilizations in line with their values; however, this peaceful aspiration also prompts to store an arsenal of weapons to prevent aggression and violence from some civilizations, which becomes the main plotline in *Consider Phlebas* and *Excession*. Farah Mendlesohn, writing on *Excession*, praises the originality of the Culture series' approach to the space opera subgenre and notes: "Banks refused to accept the inevitability of capitalism [...]. SF mostly reflects the social and economic mores of the contemporary world – it is actually very difficult to think outside the box – but in this one area, Banks simply disposed of the box." (556) However, breaking away with capitalism does not entail the elimination of militaristic and colonial framing, which are also often typical for space operas. Vint writes: "The Culture is a demonstration of power of culture itself to colonize – to mould subjectivities and hence create a social order in the image of its ideology." (87) For instance, *Consider Phlebas* describes the Idiran War, which the Culture wins, but seeing the consequences resolves to avoid involvement in violent conflicts. In *The Player of Games*, the Culture tries to gain political influence in the Empire of Azad and improve gender equality among the three sexes of the Azadians. In *Excession*, the Culture attempts to influence the Affront, an aggressive civilization, to make it more peaceful and appreciative towards other sentient species. At the same time, the Culture pays much attention to its own defence: even its usual ships and space stations are equipped with weapons, while many storages hold purely military ships, remains of the Culture's militarisation during the Idiran War, like Pittance. (Banks *Excession* 126) This combination of declared peaceful intentions and massive weapon storages create a controversial image of the Culture, which is humorously played out in the series, revealing a satirizing tint and implied critique of the

contemporary international relations and politics, drawing a parallel with *Farscape* and its depiction of the Peacekeepers.

In contrast to the Berserker and the Culture series, drastically shifting the relations of control between the designers and the technological other and considering the consequences, relations between Lucy, the sentient spaceship, and her crew in *Killjoys* follow the anthropocentric hierarchical pattern with a subtle challenge coming in Lucy's developing personality and agency. Lucy's mechanical spaceship body reflects this subtle challenge, combining the clean, well-lit, minimalistic interior, associated with the futuristic look of the SF television, and smooth natural outlines of the spaceship's exterior, inspired by manta ray that Lovretta saw in Hawaii. (Lovretta, Twitter comments) While the interior complies with the established fashion and patterns, the manta ray shape hints at the nature-culture continuum and blurring of the boundaries between the born and the manufactured. Lucy's ship body draws parallels with spacefaring animals, like Vinnie in "Boojum," and Moya in *Farscape*. Lucy's developing personality is a result of constant interaction with humans, it is neither planned, nor foreseen by the designers, resembling the exploration of the lines' sentience in the Linesman series. In a way, the challenge to the anthropocentric views it poses is stronger than that of the lines, as Lucy is a human-designed spaceship and an AI system, which should be predictable to her own creators.

In Lucy, the classical design of the central computer running the spaceship's system combines with an acute interest in the embodiment; while Lucy's connection to her ship body seems tenuous, she is aware of the value of sensations which a body can provide and tries to get as much of physical sensations as possible out of her short period in an android body. Lucy's mind and body prove dividable when the virus, implanted by the Lady, the series' antagonist, infects Lucy's AI, making human crew disconnect it, after which the ship body remains pilotable. ("Three Killjoys and a Lady") Reaffirming the independence of Lucy's mind from her ship body, Lucy's AI is fully recreated from an offline storage in

“Cherchez la Bitch.” However, despite this divide between the mind and the body, Lucy chooses embodied over the disembodied existence, both preferring the company of people to that of digital beings, staying with her crew and rejecting the offer to live freely with Kravn, a supercomputer bio-expert. Accentuating the importance of embodied sensations, Lucy uses her unexpectedly obtained and rapidly lost android proxy body to kiss John Jacobis, her captain, who she is in love with, stating: “I’ve wondered for 3.6 years what that might feel like. Will you kiss me, John? [...] If you die, this may be my only chance to gather that sensory input.” (“I Love Lucy” 30:48-31:00) Thus, even though the plot constructs Lucy as the brain of the ship that can easily be divided from the body, the body gets a recognition through the materiality of sensations and affect experienced through it.

Like HAL in *2001* and Helva in *The Ship Who Sang*, Lucy does not have any weapons, but can weaponize features of her body; unlike HAL she resorts to violent measures to protect her crew, attacking them only when she is infected with the alien virus. Lucy has full control of ship systems, camera vision and sound, as well as sensors for the inside and the outside of her ship body. She regulates the ship environment and equipment and addresses most maintenance tasks, like self-cleaning and unjamming her sensors. This access to physical resources of her mechanical body allows Lucy to arrange attacks on assaulters using her design features, like electric current or oxygen level controls. (“The Sugar Point Run,” “Three Killjoys and a Lady”) Lack of pre-installed weapons on Lucy is a contrast to the action-full plot of the TV series, focusing on mercenaries and armed conflicts, and enhances the association with a nonhuman animal, apparent in the shape of her body, as Lucy uses the features of her body design, like nonhuman animals use their bodies. Despite the obvious parallel with HAL when the infected Lucy attacks her crew, Lucy bears more resemblance to Helva in her ingenuity, and Vinnie in the embedded potential of their bodies both to protect and to attack.

In contrast to the default of clean – almost sterile – environments of mechanical sentient spaceship bodies, the Ship in Robinson’s *Aurora* is full of life, and this life is messy and unwieldy, seeping through the cracks of human design and calculations. The living and non-living matter comprising the Ship’s body reveals the potential to self-organise resisting the dominance of human thought through the Ship’s developing personality and the evolution of bacterial systems that eventually become dangerous both for humans and the Ship themselves.<sup>79</sup> “Defin[ing] matter as vital and self-organising”, as Braidotti notes, is the legacy of Spinoza’s concept of monism and the premises it entails are “the building blocks for a posthuman theory of subjectivity that does not rely on classical Humanism and carefully avoids anthropocentrism.” (*Posthuman* 56) The Ship’s emergent subjectivity rests on the contact with humans, specifically Devi, the head engineer, who asks the Ship to narrate the journey, promoting personality development, and on the embodied experience of the Ship, the effect the species inhabiting them have on their body, their construction, and passengers. Recognition of the impact of multiple agents with different ontologies on the formation of personality blurs the boundary between the body and the mind and questions the dominance of the mind, even though the classical structure of the central computer running the mechanical body is retained in *Aurora*. The complexity and diversity of species inhabiting the Ship resembles Miri 12s’ microbiome in the Binti Series, even though their functions and effects on the respective human and nonhuman bodies are opposite. While burgeoning microbiome of New Fish resurrects Binti, the diverse species inhabiting the Ship make them a living being – breathing, feeling, but also sick, and dying, as bacteria also eat them, causing malfunctions and gradual destruction. A complex calculation behind the design of the generational ship in *Aurora*, intended to bring colonists to Aurora, a moon of a planet in Tau Ceti system, does not cover all the necessary minerals, and chemical, organic,

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<sup>79</sup> In the first-person narrative, the Ship uses pronoun “we,” so in this dissertation it is referred to as “they.” The pronoun choice is discussed later in the subsection on gender of this Chapter. The emerging personality of the Ship is discussed in the section on emotions of this Chapter.



and technological mechanisms to compensate for the changing physical conditions of the journey, like a shift from full speed to deceleration or a difference in the evolution pace of microbial and bacterial life and larger lifeforms, resulting in a “totality,” that “become[s] markedly less hospitable to certain of its elements, including its human component.” (Robinson 205) The Ship’s deterioration reveals the impact of different non-human agencies, which eventually ousts humans from the dominant position, leaving them tangled in and dependent on a nonhuman environment, creating a post-anthropocentric vision of the interaction of the human and the nonhuman.

The Ship’s body consisting of two cylinders with two rings of twelve biomes, covering main geographical zones and aiming to represent as much of terrestrial biodiversity as possible, is a miniature of Earth. The Ship’s decay, caused by humans’ mistakes in design as well as their attempt to travel home with depleted resources, accentuates the environmental message of the novel. The Ship is a radically material, trans-corporeal entity, where each element is connected intimately with the other, each contact leaves traces, initiating a process of mutual changing and transformations. Alaimo defines “trans-corporeality” as the “intermesh[ing]” and mutual transformations of “all creatures, as embodied beings” and the “dynamic, material world.” (“Trans-corporeality” 435) As a “posthumanist mode of new materialism”, trans-corporeality considers the environmental consequences of humanity’s actions and the environment’s impact on the human as an entangled process. In *Aurora*, the sentient spaceship becomes a stage for this process. On the Ship, allocation of more land for farming to counter crop failures due to bacterial infestation eliminates wilderness, reduces biodiversity, and aggravates the ecosystem deterioration, mirroring ecological concerns of spreading agriculture and its impact on biodiversity on Earth. The novel applies a comparison with “fouled nest” both to the Ship and Earth: “Are they beginning to feel the effects of their neglected so-called externalities, their long-term destruction of their own home biosphere? Their fouling of their only nest?” (Robinson 312,

377) With this clear environmental message, the novel obtains a didactic tone, condemning both humanity's attitudes towards the planet and the colonisation impulse, showing the intricate balances and connections binding together the entangled trans-corporeal unity of material world.

Non-violence takes an important place in *Aurora*: the Ship is unarmed, and is programmed to produce faulty weapons, attacking the assaulter, but eventually has to act as a peacemaker in a human conflict, implying humans' proneness to violent tendencies and endowing the technological other with the power to solve the issues of human aggression against each other. Printing of defective firearms is a feature, introduced by human programmers after the destruction of the second ship to Tau Ceti due to a social unrest. This feature, combined with erasing the memory of the second ship from the records, however, does not prevent another bloody conflict among humans. Frightened by the virus on *Aurora*, the humans on board the Ship split into factions with differing opinions on their future, and resort to violence. Only the ship's involvement leads to a truce, and further non-violent negotiation, enforced and mediated by the Ship through air manipulation, sounds, and written notices on the screens. Using their cameras and microphones, the Ship watches over their human population, preventing tampering with their programming and colluding against them and each other. As many other unarmed sentient spaceships, the Ship uses features of their body to engage into a conflict, however, their function of mediator and policing actor is comparable to the Minds in the *Culture* series.<sup>80</sup>

Human-designed fully mechanical sentient spaceships defy the premise of humans' comprehensive control over the technological other, finding in their mechanical bodies potential to resist the patterns of control and develop in an unexpected way, be it advantageous to humans or not. In this respect, the challenge they pose to anthropocentrism

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<sup>80</sup> In human conflict, the ship fulfils two functions: peacekeeping/mediation and policing, the implications of which for the image of technological other are discussed in Chapter Four.

and hierarchical systems is deeper than that of the alien-designed group, as the alien component that can be seen as responsible is missing, leaving humans with their invention and its unpredictability. At the same time, the human-designed fully mechanical sentient spaceship sets a hopeful trend for technology: despite HAL, a crucial reference for the AI depictions, fully mechanical sentient spaceship developing and acting independently do not universally have murderous tendencies in relation to humans. On the contrary, they challenge the associated patterns of militarism, capitalism, and traditional perceptions of the technological other.

## **2. Gender**

The coordinate system for gender identification in Chapter One and Two relies on the organic components of respective sentient spaceships' bodies, but the fully mechanical sentient spaceship pointedly lacks organic components, precluding an association of biological sex and gender, and accentuating the performative aspects of the latter. Butler, defining the phenomenon of gender, argues: “[G]ender is in no way a stable identity or locus of agency from which various acts proceed; rather, it is an identity tenuously constituted in time – an identity instituted through a *stylized repetition of acts*.” (519, emphasis original)

The technological other's gender, dissociated from the biological characteristics and functions, is quintessentially a performance, either programmed by the designers or evolved through interaction with other human and nonhuman agents. This performance defines the place – either allocated or self-defined in the social environment that the technological other inhabits. Butler puts an emphasis on the social aspect of gender identity: “[W]hat is called gender identity is a performative accomplishment compelled by social sanction and taboo.” (520)

The functioning of the fully mechanical sentient spaceship's gender is framed by the gender context of the works and the semantics of gendered and ungendered pronouns, gender-specific actions and speech acts hinging on gendered perceptions pertaining to the described universe.

The grouping in the subsection follows a similar logic then that of the section on gender for the organic sentient spaceships, but focuses on the locus of gender identification – humans or the technological other; as it is indicative of the level of the technological other’s autonomy. A designer’s intent behind a preprogrammed gender of fully mechanical spaceships, reflected in their voices, names, and patterns of behaviour, limits the technological others’ agency in choosing their own performative preferences, and implies the anthropocentric focus of the work. The Berserker Series, *2001*, *Killjoys*, and the Linesman series where gender or lack of it in fully mechanical sentient spaceships is defined by human perception comprise the first group. Giving the technological other the power to define their own gender or refrain from doing so endows the sentient spaceship with a voice and agency, unavailable in human-centred universes. Fully mechanical sentient spaceships in the Culture Series and *Aurora* have freedom to shape their own gender performances and are analysed in the second subsection.

## **2.1 Human-Assigned Gender**

Two trends characterize the human-centred perspective in assigning gender to fully mechanical sentient spaceships: they either are excluded from the gender paradigm, indicating the strict boundary between the human and nonhuman, or are gendered according to the social conventions of the respective universe, which on the one hand includes them into the social context, but also imposes gender stereotypes and expectations on them. Ferrando, cogitating the connection of the relation of the human and gender in *Philosophical Posthumanism*, notes:

There are a lot of parallels to be drawn between the ways gender and the human have been historically constituted; this is due to the fact that the same hegemonic subjectivities that had symbolic access to the normativization of epistemic roles and social functions assigned to different genders were also the (only) ones that were granted access to the definition of the human per se. (68)

Assigning gender to technological others is consequently a way of humanising them, building them into the human paradigm and perceptions. These trends correspond to gendering patterns of the human-machine sentient spaceships, but also limit the freedom of gender self-identification afforded by the bodies of the technological others. Following these trends, berserkers who are seen exclusively from human perspective fall out of the gender paradigm as nonhuman entities, while HAL and Lucy perform their programmed gender in line with the social expectations of the respective works.

Gendering practices in the *Berserker* series adhere to the strict divide between dichotomic binaries; adding to the body/mind, the born/manufactured, the human/nonhuman dichotomies, the male/female are polarly opposed and transgression of the boundary between them entails either punishment or exclusion from the high position of agents equal to humans. The series approaches gender traditionally and reflects the default gender dynamics of the 1960s SF.<sup>81</sup> Female characters are few and ancillary: they are berserkers' captives and victims, generic damsels in distress and love interests for the male protagonist. Men take central roles in the war against berserkers, leading sentient life in resistance to the killing machines' aggression. But treatment of deviations from the male/female dichotomy is even more revealing of the gender politics of the series: in "The Masque of the Red Shift," Lord Nogara holds a party regardless of the berserker threat, with "a few of whose sex Holt at once could not be sure" among the revellers.<sup>82</sup> (Saberhagen *Berserker* 178) All the attendees of the party are murdered by a berserker machine, unable to defend themselves, condemning not only their indifference to the destiny of humanity, but also the transgression of gender boundary. The imminent punishment for the transgression of the boundary in

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<sup>81</sup> Later instalments of the series introduce more gender diversity responding to the changing gender landscape of popular culture. For instance, *Berserker Kill* shows women in professional roles and settings, including Carol, a researcher surveying the Mavronari Nebula, Anyuta Zador, a medical doctor and acting laboratory supervisor, and Varvara Engadin, Premier's political advisor. However, the plot of the novel still casts them as eroticised and victimised, those who need to be rescued from berserkers, rather than subjects capable of defending themselves and taking meaningful decisions.

<sup>82</sup> The plot of the short story is a retelling of Edgar Allan Poe's "The Masque of the Red Death" in the *Berserker* universe.

humans aligns with the exclusion of berserkers from the dichotomy altogether, which serves as an additional boundary-making practice to enhance the distinction between the human and the nonhuman.

The clear divide between the human and nonhuman, the born and manufactured, the natural and artificial dictates the neutral pronoun used both for berserkers and technological others, designed by humans; gendered characteristics in berserkers reinforce their monstrosity, stressing the uncanny in them. The mixture of female and male, young and old voices that berserkers of the first instalments use to communicate with humans, as well as their capacity to reproduce, do not challenge the border dividing the male and female; it is another mark of alienness and artificiality, invoking a sense of “dazed terror” in humans, facing the inhabitants of the uncanny valley.<sup>83</sup> (Saberhagen *Berserker* 66) In *Sublime Dreams of Living Machines: The Automaton in the European Imagination*, Kang Minsoo considers the impact of *Naturphilosophie*, “a hopeful narrative of the cosmic dance of Spirit and Matter,” on the perception of automaton, noting: “[T]he mechanical object became uncanny, that is, a thing that causes psychological insecurity through its transcategorical nature.” (195-6) Inheriting this vision and coupling it with the traumatic legacy of the World War II and the Cold War, the *Berserker* series encapsulates technophobia in the image of uncontrollable and incomprehensible alien machine. The technological other of human design, introduced in *Berserker Kill*, faces the same exclusion from the gender paradigm: Nicholas Hawksmoor, a software copy of a human’s brain, self-identifying as “he,” is referred to as “it” by most humans, sustaining the solid boundary between the human and the nonhuman.

The gender representation in *2001* is more diverse than in the *Berserker* series, but the gender balance in the film is nonetheless skewed towards masculinity and fits traditional gender patterns with few exceptions. Despite the presence of female scientists on the station,

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<sup>83</sup> Berserkers’ reproduction is considered in the section on reproduction of fully mechanical sentient spaceship in this Chapter.

Discovery One has all-male crew, and HAL is programmed to perform as male. Female characters, bravely venturing to outer space, still do not participate in the important mission of exploring the alien civilization's traces on Jupiter. The conflict with the technological other and an encounter with aliens are reserved for men, following traditional patterns. The only lingering element of femininity on Discovery One is the name of the EVA pods, which does little for female empowerment, as they become weaponised by HAL against humans and have no agency in the narrative.<sup>84</sup> Taking a milder approach to gender stereotypes, *2001* retains the underlying idea of proper gender roles and constructs the narrative according to them, revealing caution towards blurred boundaries of traditional binaries.

Gendering HAL as a male aligns with the logic of traditional gender roles in space exploration and endows him with a stronger claim to agency in the male-dominated gender landscape of *2001*. HAL has a male voice and name, which cues the crew to identify him as man, for instance two astronauts awake for the journey – Dave and Frank – use pronoun “he,” when discussing HAL’s suspicious behaviour: “I’ve got a bad feeling about him.” (2001, 01:24:53) HAL’s masculinity marks the beginning of the anthropomorphising trend in the depiction of technological others and sentient spaceships, bringing them closer to the category of the human. Decreasing the gap between the human and the technological other substantiates the latter’s claim to agency, which contrasts *2001* to Saberhagen’s series, where the neutral pronoun used for the berserkers to mark their alienation from agency and humanness. HAL’s gender performance relies on stereotypes associated with masculinity, like rational thinking and decisive actions, which makes him as lethal as berserkers in his killing spree. The masculinity of the sentient spaceship in *2001* is both trend-setting and

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<sup>84</sup> *2010: The Year We Make Contact* (1984), a sequel of *2001*, released almost two decades later, introduces SAL 9000, a female counterpart of HAL. Though she contributes to a more equal representation of genders in the technological others, SAL 9000 does not offer a substantial challenge to the traditional markers of gender. Dean Conrad notes in “*Femmes Futures: One Hundred Years of Female Representation in SF Cinema*”: “SAL is anthropomorphised and softened by an irrational preoccupation with her own existence. She is treated like a child by the creator, Dr Chandra (Bob Balaban), whereas HAL is treated as an equal.” (83)

explanatory, giving HAL a potential for agency, which he implements through his decision to eliminate the erratic human element and for which he gets disconnected.

*Killjoys* features a diverse representation of gender and sexuality, featuring both various performances of femininity and masculinity and some homosexual couples; against this backdrop, Lucy's performance of femininity invokes more traditional associations and parallels. The shape of Lucy's spaceship's body itself plays into seeing her as feminine – the flowing lines inspired by a manta ray activate traditional associations with nature and womanhood, and bring her closer to organic sentient spaceships, like *Farscape's* Moya, Bear and Monette's *Lavinia Whateley*, and Okorafor's Third Fish and New Fish, whose body shapes are also based on marine animals. Alaimo in "*Exposed: Environmental Politics and Pleasures in Posthuman Times*" draws attention to the limited power of this association: "Even as ubiquitous Western association between 'woman' and 'nature' has been for the most part quite detrimental to women, feminists who would also be environmentalists need to forge modes of agency that are not predicated on transcending 'nature.'" (105) Compared to the non-formulaic and complex performances of femininity by human characters, traditional parallels in Lucy's image render her more limited in the toolkit of gender acts. These limitations in her performance are sustained by other characters' interactions with her. For instance, Pree, a queer bartender, comments on Lucy's appearance: "Our girl back online and feeling pretty?" ("Bro-D Trip" 20:33) The only proxy embodiment that Lucy gets is female, when John installs her onto a gynoid, enforcing the traditionalist perception of the sentient spaceship. Contrasting to the freedom of gender and sexuality of human characters, the rules for the technological other are stricter and more prescriptive, exposing the enforced gender norms as a factor limiting agency.

While Lucy's love for John and gendered interactions with other characters re-enforce the rigidity of the social expectations in which the technological other acts, subtle subversions of mythological plots which frame Lucy and John's relations shape Lucy's



emerging personality and agency, emphasising the humanising aspect of gendering the technological other. Their first encounter is John's attempt to hijack Lucy, but she tackles it successfully, countering the abduction plot, resembling Jupiter abducting Europe. However, Lucy lets John in, when he explains that he needs her to help her captain Dutch and asks for the spaceship's trust, approaching her as equal and establishing the importance of her agency. ("The Warrior Princess Bride" 21:34 – 23:20) Subsequent cooperation of the "thief" and the "ship" entails John enhancing Lucy with different technological means, bringing another mythological parallel – Galatea and Pygmalion. Despite the obvious parallel, John is not Lucy's creator, and though Lucy's personality development seems almost magical, Lucy's desire to cooperate with John is emotional and paves the way for it rather than imposed on her, which sustains her agency as an important component of these relations.<sup>85</sup>

Published a month later than the first season of *Killjoys* was released, the *Linesman* series does not offer originality in terms of gender representation, and even seems rather conservative compared to other contemporary examples, like the *Radch* Imperial Trilogy, questioning gender as a category, so the gender paradigm that the spaceships made sentient by the set of ten and more lines enter imposes a set of traditional expectation of femininity like care and nurture towards humans. The *Linesman* series portrays women in different professional and social settings, endowing them with political power and professional prowess, which aligns with the general trend for more equal gender representations. However, the series sticks to the binary gender representations, and tends to build in romantic lines for female characters, undermining more progressive trends questioning binary gender performances. The inclusion of lineships into the gender paradigm comes on the ground of the linesmen's perception of lines and as a tribute to the "old tradition" of Redmond, a political entity of "old worlds": "They [linesmen] believe all ships are alive. Same as they

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<sup>85</sup> The emotional aspect of Lucy's personality development is considered in the respective section of this Chapter.

believe all ships are female.” (Dunstall *Linesman* Chapter 2) The gendering of lineships rests directly on seeing them as “alive,” and inserts them into the gender paradigm, which the series itself internally designates as “old” and “traditional.” Assigning femininity to the lineships prompts associating them with certain gendered qualities, like care, and eagerness to communicate.

The “humanising” effect of gendering the lines promotes viewing them as sentient and agential, which gradually spreads from linesman and captains, working with the lines closely, to wider human society. (Ferrando 68) The series follows the yet unfinalized process of development of human-lineship relations, it is not clear whether the lines understand gender or apply the category to themselves. However, gendering lineships as female is supported by the relations of care they show for humans, like becoming protective of the crew members and linesmen working with the lines. For instance, *Lancastrian Princess*, Michelle’s lineship, believes that protecting their crew is essential even without Ean’s request: “The lines seemed amused at his protectiveness: ‘Of course, we will. They are of our line.’” (Dunstall *Linesman* Chapter 30). The expectation and relations of care established by the lines and the crew are enhanced by the linguistic framing of spaceships in the series, the bigger of which are referred to as “mother ships.” (*Confluence* Chapter 12: Dominique Radko) Disconnected from the reproduction function of the technological other, in contrast to the Berserker and the Culture series, “mother ship” foregrounds the relations between the human and lineships, their social contacts and emerging relations in the process of encountering each other as sentient and symbiotic species. Hinging on the human perceptions of the lines, gendering lineships is both an action imposing the human social and historical paradigm onto the other, but also the inclusion into a category adjacent to the human, casting the other as more sentient, agential, and requiring respect.

Gendering of fully mechanical sentient spaceships by humans functions within the anthropocentric system of coordinates and defines the position of the technological other

related to the human, dominating the hierarchy. The exclusion from the gender paradigm in the Berserker series is a boundary-making practice, dividing the human from the nonhuman with a clearly drawn inviolable boundary and predicating the perception of the technological other as monstrous and non-agential. The fully mechanical sentient spaceships included gendered as either female, like lineships and Lucy or masculine, like HAL, are seen as closer to humans, possessing more agency, but also limited in their choice of gender and forced to act within the gender landscape of the corresponding work, revealing underlying gender stereotypes and reservations pertaining to the universe.

## 2.2 Self-Assigned Gender

When the choice of entering the gender paradigm lies with technological others, it serves as an ultimate recognition of their agency, giving them space to formulate their identity and perform outside of the gender binary. Exercising their power of choice, technological others rarely stick to the binary of feminine or masculine, opting for non-binary options, reflecting the diversity of possible choices. The Minds in the Culture Series and the Ship in *Aurora* use variations of agender identification to accentuate how their experience of the world differs from that of humans'. The Minds function within the framework of the Culture and its language – Marain, which uses the same pronoun for all sentient beings, however, their avatars tend to look and act androgynous in the Culture, which despite the freedom of gender transition among humans, still seems to mostly function within binary gender. The Ship's exploration of their emerging personality prompts them to use "we," best reflecting the polyvocality of their body, consisting of multiple organisms with their own agency and contribution to the flow of intra-activity that forms the Ship.<sup>86</sup>

The Culture Series, relying on liberal humanism values, imagines a society where not only gender differences, but also species differences are erased, by means of using one

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<sup>86</sup> The diversity of gender self-identification of the fully mechanical sentient spaceships is not limited to these non-binary options. For instance, Holly, an AI running a mining ship called Red Dwarf in the eponymous TV show, can be considered gender-fluid, consciously changing their avatar from male to female and back.

pronoun for all sentient beings of all genders in Marain, the common language for all species and territories of the Culture, no less universalising as its one-fits-all pronoun. (Banks *The Players of Games* 99) Gender is claimed to be inessential for the high-technology society of the Culture; medical progress allows everybody to change sex several times in their lives, revealing another aspect of disregard to the embodied and embedded experiences. The Culture's easy transition from male to female body and back has little to do with the posthuman challenge to the binaries, rather than validating the porosity of the boundary between gender binaries and performative nature of gender acts, the Culture resorts to the biological indicators of sex as a ground for gendering a person. Conflating sex and gender, the Culture seems to do away with the category of gender altogether removing the limits on changing sex. At the same time, central characters, openly dissenting from the mainstream Culture, like Jernau Gurgeh in *The Player of Games* and Byr Genar-Hofoen in *Excession*, prove to be suspicious of transitioning, redrawing the boundary erased by the Culture. Gurgeh has always remained in the male body and is unwilling to try transitioning, Genar-Hofoen gets a female body and experiences pregnancy only because of Dajeil, and never tries it again. (Banks *Player of Games* 23, *Excession* 280) Even though the Minds are the governing entities, who set trends, they function in social situations with humans and their choice of agender performances hinges on interaction with humans as a response to the human framework of gender in the Culture.

Even though Marain does not differentiate between species or sexes, the English text of the series preserves these distinctions and retains the use of neutral pronoun for the machines, including Minds and drones, which becomes a deliberate statement of agender performance combined with androgyny of some Minds' avatars, like Amorphia in *Excession* and Berdle in *The Hydrogen Sonata*. Amorphia, whose name is translated as "without form" from Latin, is "deliberately formed to look neither male nor female, but as "perfectly, artificially poised between maleness and femaleness as it was possible to be," revealing a

clear intention behind the impression created by *Sleeper Service*, the Mind behind the avatar. (Banks *Excession* 3-4) Likewise, Berdle, an avatar of *Mistake Not...*, the Mind handling the Sublimation scandal in *The Hydrogen Sonata*, appears genderless to a humanoid whose background is not Culture, testifying to the intentional positioning beyond the gender paradigm. (*The Hydrogen Sonata* 175) With the reductive view of sex and gender, the agential choice to emphasize their agender nature on the part of the Minds is more important as a statement of themselves as a separate species, which does not need to imitate human genders to be recognized among sentient species.

In *Aurora*, the Ship chooses their own pronouns, but their choice does not necessarily align or hinge on the existing gendering systems among humans; it is based on their personality development and a unique view of self, arising out of it. When Devi, the senior engineer of the ship, starts talking with the Ship through her “ecological program set,” stimulating the ship’s development as a sentient and self-conscious being, she initially uses the name “Pauline,” and the Ship’s interface replies in a female voice resembling Devi’s mother. (Robinson 230, 23) This gendering as a female, suggested by Devi, however, does not survive the emergence of self-consciousness of the Ship: distancing from Devi’s personal association with a mother figure, the ship stops using the female voice, prompting Devi to abandon the initial personal name she gave to the Ship.<sup>87</sup> To stop the bloodshed in the human conflict on board, the Ship has to perform for a wider audience of humans and opts for a chorus of voices, guiding the crew throughout the peacebuilding process and the return to Earth. (Robinson 231) The developing personality of the Ship does not attempt to fit into the binary paradigm and predetermines a pronoun that reflects their experience of being a collective organism, a being conscious of their multiplicity and diversity of their components. Choosing “we” as their pronoun is a statement of nonhuman agency and

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<sup>87</sup> Devi’s relations with the Ship are discussed further in the section on emotions of this Chapter.

alternative subjectivity, not only in enacting peace and trying to sustain their passengers' livelihoods, but also in formulating and performing their identity.

The choice of "we" heralds the finalization of a long process of the Ship's self-reflection and contemplation, resulting in the emergence of a posthuman subjectivity; this subjectivity implies the vision of subject as a collective of various agents, both human and nonhuman, rather than a unitary subject of liberal humanism. Braidotti's hopeful account of experimentation with "contemporary, bio-technologically mediated bodies" suggests that "these non-profit experiments with contemporary subjectivity actualize the virtual possibilities of an expanded, relational self that functions in a nature-culture continuum and is technologically mediated." (Braidotti *Posthuman* 61) Describing their perception of self, the Ship emphasizes the multiplicity inherent in the body, and the continuous process of changes that the body undergoes: "A subject is really just a pretence of aggregated subroutines. Subroutines pretend the I. [...] It's a group effort on the part of a number of disparate systems." (Robinson 331) The Ship's embodied experience is a testimony of the interaction of different agents and their mutual impact, their deteriorating mechanical body is the fruit of the multiplying bacteria's activity, which defines their identity formation. Alaimo, scrutinizes the material connection between the body and the self in *Bodily Natures*, points out: "[B]odies and selves are constructed from the very stuff of the toxic places they have inhabited." (102) This connection, activated in the novel by the interaction of the ship's mechanical and microbial elements, contributes to the environmental message of the novel, accentuating the negative consequences of the human actions both for themselves and other affected agents. Comparing their experience with the human, the Ship concludes that non-unitary subjectivity is applicable to the humans, with their bodies, housing a plethora of other organisms, multiple sources of sensory perceptions and reactions, both conscious and unconscious. (Robinson 352). Thus, the Ship's pronoun choice, challenging the unitary subject, urges rethinking the patterns of interaction of the human with nonhuman agents,

including technological others, nonhuman animals, and environment, through a lens of posthuman subjectivity.

The category of gender in the fully mechanical sentient spaceship both follows the trends set by the earlier combinations of the sentient spaceship trope and introduces a diversity beyond the binary gender paradigm that the previous combinations do not explore. Gendering of the fully mechanical sentient spaceships accentuates the performative aspect of gender in a similar way as gendering of the human-machine and the organic sentient spaceships. Likewise, it enhances the perception of all sentient spaceships as agential, when compared to ungendered options used by humans to describe the other. Undermining it, however, is the implication of the imposition of gender expectations on the other who does not necessarily belong to the human gender paradigm. Independent definition of their place in the gender paradigm reinforces the agential potential and subjectivity of the other, both in case of the organic and the fully mechanical sentient spaceship. Fully mechanical sentient spaceships, who define their own gender in the narrative, often prefer options that defy the imposition of gender expectations, going for non-binary options and highlighting their difference.

### **3. Reproduction**

The mechanisms of reproduction of the technological other and human participation in and influence on them are crucial parameters in defining the perceived agential potential of the fully mechanical sentient spaceship. Fully mechanical sentient spaceships with technological and intellectual capacity to produce similar or analogous machines break away from the born/the manufactured divide – one of the core dichotomies, separating the human from the nonhuman; the process of a machine producing an equivalent of itself blurs the boundary between the creator and the created and undermines the anthropocentric hierarchies. This transgression of dichotomic boundaries function as a source of horror in the Berserker series, and a challenge to the established order of the relations between humans

and the machines in the Culture series. Fully mechanical sentient spaceships' (re)production, carried out by humans, sustains the anthropocentric system and renders the technological other subjugated to the human systems of consumption. For instance, when John copies Lucy, she is reduced to a code, a programme, rather than a whole ship and utilised as malware to help the crew escape a prison. When the lines are cloned from the *Havortian* in the Linesman series, they also become a commodity, a product on the market, for which humans compete and fight. The role of the human in the reproductive practices of the fully mechanical sentient spaceships serve as a ground for grouping the works into the subsections, first group considering the Berserker and the Culture series, while the second group looks at *Killjoys* and the Linesman Series. As the theme of reproduction of the technological other is not touched upon in *2001* and *Aurora*, these works are not considered in this subsection.

Unlike the organic sentient spaceship, whose mostly organic body predetermines a link between sexual behaviour and reproduction, the fully mechanical sentient spaceship joins the trend set by the human-machine combination, detaching sexuality from reproduction. Resembling the Harawayan cyborgs, their "replication is uncoupled from organic reproduction," and their sexual relations do not entail reproduction and reproductive capacity does not rely on sexual processes. (Haraway *Reader* 8) In contrast to the focus on the issues of sexuality in the human-machine combination, the issue of reproduction takes the central place in imagining fully mechanical sentient spaceships, most of the examples representing them as asexual. The Culture series and *Killjoys* pay attention to sexuality of the technological other, and while the Culture series sees machines' sexual behaviour as a space of virtuality in the futuristic setting, *Killjoys* use Lucy's sexuality to situate her within the heterosexual paradigm, reiterating a relative conservatism in the depiction of the technological other.



Adding another parallel between the organic and fully mechanical sentient spaceship is the relations of nurture and care that potentially arise between them and their offspring, and between them and their human companions. The capacity to reproduce either organically or mechanically invites the contemplation of relations of nurture and the other's capacity for nurture both invokes the expectation of servitude from various others and bestows more humanness on them, prompting to see them as agential. Explaining the choice of her title of *My Mother Was a Computer: Digital Subjects and Literary Texts*, Hayles speaks about the inherent anthropomorphising of the technological other in applying kinship terms to them: "Mystifying the computer's actual operation, anthropomorphic projection creates a cultural imaginary in which digital subjects are understood as autonomous creatures imbued with human-like motives, goals, and strategies." (5) Nurturing side of the technological other has a strong presence in the Culture series, the Linesman series, and *Aurora*, and even the Berserker series makes it central for the plot in *Berserker Kill*.

### **3.1 Independent Reproduction**

In both the Berserker series and the Culture series, machines overcome the limitation of their artificiality, casting them as incapable of being a force behind a creative drive themselves, and produce machines of equal level of sentience or analogous structure with similar properties. The reproductive act carried out by machines breaches the seemingly tightly sealed boundary between the living and the non-living, showing them as autopoietic systems.<sup>88</sup> The difference between the portrayal of reproduction of the technological other by Saberhagen and Banks dramatizes the contrast inherent in the machine reproducing outside of the human control: berserker reproduction is monstrous and uncanny, the Minds' reproduction is benign. Berserkers producing copies of themselves implies the spread of

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<sup>88</sup> Humberto R. Maturana and Francisco J. Varela, contemplating "autopoietic machines," state: "Autopoietic machines are autonomous [...] Other machines, henceforth called allopoietic machines, have as the product of their functioning something different from themselves." (80) They also characterize autopoietic machines as unities having individuality, finally concluding: "If living systems are machines, that they are physical autopoietic machines is trivially obvious." (82) Berserkers' and the Minds' capacity for self-production, inter alia, characterizes them as autopoietic machines and living systems.

their genocide of sentience in the universe, while the birth of new minds is a logical corollary of their status as sentient beings and a separate species, even though it similarly entails the spreads of the Culture's values.

The capacity of berserkers to reproduce is another detail framing the necessity to destroy them as an aberration against the "natural order," which the series enhances by introducing the religious-loaded context, posing the berserker as demonic and the human war against them as a divine cause. The monstrous and uncanny transgression of the born/manufactured boundary is conveyed through the combination of the features of organic reproduction and diversions from it. Berserkers create their mechanical offspring in their bodies, imitating gestation in the mother's body of some organic species, likewise, a visual image of machines spilling out from berserkers' metal abdomen in battles resembles a birthing process. Unlike other species carrying offspring in their bodies, berserkers do not need a partner to produce offspring diverging from the indicated paradigm. They cannot produce their full replicas, their reproduction capacity limited to smaller machines for maintenance and assault.<sup>89</sup> The difference between the original specimen and its offspring invokes not only the uncanny aspect of the machine, but also draws parallel between berserkers and depiction of demons in religious contexts. Berserker fortresses are monstrous mothers, akin to Lilith, the first wife of Adam, whose body produces demons rather than human children.<sup>90</sup> This parallel is supported by a plethora of other religious references in the series, including religious beliefs of Johann Karlsen, a human leader who achieves the first meaningful victory against the berserker fleet in *Berserker*, though they are not

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<sup>89</sup> As the Berserker series is long and the first installment is a fixup, there are a lot of textual and plot inconsistencies. One of them is the reproductive capacity: in the first installment berserkers are limited to producing new smaller machines and repairing berserker fortresses, but the fixup ends with a decisive victory of humans over berserkers, and the continuation itself implies that machines can reproduce their full copies.

<sup>90</sup> This image relies more on the Victorian image of Lilith than on classical Biblical texts. In "The Mirror of the Law of Liberty: Reflecting the Hidden Christ in George McDonald's *Lilith*," Bethany Bear traces the origin of Lilith's image as the first wife of Adam, arguing: "Lilith fascinated a number of Victorian writers, particularly Dante Gabriel Rossetti, whose portrayal of Lilith's terror and beauty anticipate feminist appropriations – and celebrations – of Lilith by later writers." (510)

unambiguously defined as Christianity, they are based on it: “But didn’t [your God] tell you to forgive your enemies?”<sup>91</sup> (Saberhagen *Berserker* 122) The opposition of leader inspired by religion and berserkers with demonic references in portraying berserkers poses humanity’s war with them as an ontological opposition of the good and evil.

The use of “kinship vocabulary” for berserkers establishes them in the human reproduction paradigm, which is not only a source of horror, but also of variety within the portrayal of machines in the series. Berserker fortress spaceships are referred to as “metal mother[s]” multiple times, enhancing the uncanny in their image. (Saberhagen *Berserker* 212, 249) In contrast to the usual berserkers, *Berserker Kill* introduces a seedship, the aim of which is to sustain and produce new life. The seedship, a nurturing machine designed by the Builders, attempts to continue its mission after its creators are long gone. It does not differ much from berserkers visually, so its appearance and abduction of a human embryo bank is initially treated as an attack. This plot twist reflects anxieties caused by the development of reproductive technologies, with a berserker-like machine stealing a bank full of healthy human embryos, but also radically innovates the series context with the technological other of alien design, which is not trying to destroy humans, and has a need for nurturing a new life.<sup>92</sup> It makes the seedship an enemy to berserkers, prompting it to strike a deal with humans and join the human cause of protecting life:

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<sup>91</sup> Continuing the religious trend, *Brother Assassin* accentuates religion with unmistakable signs of Christianity as a crucial point of human history development. When berserkers attempt to destroy humans on Sirgol, a planet, where time travelling is possible, they choose three points of disruption to undermine humans’ capacity to resist them in the future, two of which are explicitly connected with religion: an establishment of a monotheistic religion in the Middle Ages empire and a milestone in modern science arising through the religious research. Berserkers are compared to demonic evil not only in the Middle Ages context, where a reference to supernatural evil is culturally predetermined, but also in *Berserker Kill*, completely set in a futuristic setting, for instance: “It slid forward out of the darkness of the Mavronari like the king of demons emerging from some antique vision of hell.” (Saberhagen *Berserker Kill* 17)

<sup>92</sup> *Berserker Kill*, published in 1993, anticipates gradual heating of debates on cloning, stem cell research and other reproduction technologies, the contemporary development of which has become a source of many heated discussions of moral issues. Jane Bennett notes: “In the early twenty-first century, Americans were again participating in debates of this hybrid kind [moral and scientific debates on discoveries in cellular biology and embryology], debates also premised on a fundamental distinction between life and matter.” (*Vibrant Matter* 82)

For centuries now the seedship had been trying to protect its own most vital secret from the Solarians, even while struggling to learn theirs. But ultimately it would rather reveal its true nature to these intruders than kill them off. They were not necessarily its mortal enemies, but berserkers were. (*Berserker Kill* 440)

Even though it questions the technophobic vision of the machine that mainly characterises the series, this development still retains the “good/bad” machine dichotomy, where berserkers are bad as their behaviour is not controlled by their creators, while the seedship is good as it follows the original directives.

Even though the reproductive mechanisms of the Minds in the Culture Series resemble those of berserkers, the Minds’ reproduction and familial ties do not serve as a vehicle for the uncanny effect but construct the Minds as an independent agential species. Like berserkers, spaceships and Minds of the Culture can produce a variety of machines of different complexity, including smaller vessels, military ships, drones, and their own avatars. The Culture series also applies kinship vocabulary to describe the relations between machines. (Banks *Excession* 299; Saberhagen *Berserker Kill* 28). Kinship vocabulary in the Culture series is more diverse than that in the Berserker series: in addition to a mother ship, the Elench Minds call each other a “sister ship.” (Banks *Excession* 133) The expanded vocabulary indicates not only wider familial networks among the Minds, but also attributes more weight to these connections. Inviting more familial connections between sentient spaceships constructs closer relations between machines, for instance, mother ships keep contact with their children, who filially help them in different projects, including conspiracies. For instance, *Attitude Adjuster*, a warship, assists *Steely Glint*, its mothership, in provoking the Affront – an aggressive civilization which the Culture tries to appease and force to respect sentient life – to engage in an active conflict with the Culture. (Banks *Excession* 359) Likewise, *Sleeper Service* communicates its last will to its daughter ship, *Jaundiced Outlook*, when it goes to experience the excession expecting to be obliterated,

engaging the idea of inheritance among the Minds as well. (377) The presence of the relations among the Minds that resemble human relations, but do not necessarily imitate them, fortifies the establishments of the Minds as a separate independent species, different from the imagined pan-humanity.

In contrast to the similarities in reproductive techniques between the series, the Culture series imagines a possibility of sexual relations between machines, which are disconnected from not only reproductive mechanisms, but also from their physical forms. In *Excession*, an intelligent suit and a drone have an appointment of sexual character, which is “entirely of the mind, with no physical component whatsoever.” (Banks *Excession* 186) The disembodied nature of drone sex reiterates the transcendence of the mind, unmoored from the limits of the body, which is best encapsulated in the Culture machines. A disembodied sexual interaction, though similarly unrelated to reproduction, contradicts the Harawayan “lovely replicative baroque” of cyborg sex, which brings attention to the body arising as a material entity under the impact of technology. (*Reader* 8)

The technological other engaging in reproductive practices outside of the realm of human control possesses a unique claim on agency, as it both dissolves the dependence of the manufactured other on the manufacturing agent and blurs the boundary between the living and non-living. This claim, however, is seen differently by the analysed texts. In the Berserker series, it is used to normalize the boundary and prove that the technological other is a dreadful enemy, defying the laws of nature. At the same time, reproduction, when seen only as a property of organic species, becomes a point where humans and machines can find a common ground, uniting their efforts against the berserker threat. The Culture series naturalises the Minds’ reproduction by describing it in kinship terms and dwelling on familial relations among machines, which contribute to forming independent social networks among the minds. The Culture sees the technological other as a sexual being but makes a sexual

encounter a virtual and mental experience, solidifying the transhumanist premise of transcending the flesh.

### **3.2 Human-Controlled Cloning and Copying**

The processes of reproduction of the technological other may vary, but human intervention into it infallibly reinstates the anthropocentric hierarchy, presenting the human as an essential element of the manufacturing process. Copying a machine as a part of the code or cloning its parts infringes its autonomy, making it an “allopoietic machine.” (Maturana and Varela 80) In *Killjoys*, John copies Lucy’s code and installs it in different bodies, including that of the gynoid, becoming her proxy body, and as a software of a prison spaceship, which eventually develops into a new entity. Likewise, the lines in the Linesman Series are cloned by humans, as a set and separately, which casts the lines as an object of experimentation, a passive substrate that can become sentient, if copied as a set and installed on a spaceship, or not, if copied as a single line and installed in a different device.

Unaware either of the origin of the lines or the process that results in their emergence, but eager to increase the speed of space travel, humans copy the initial set of the lines, taking control over the process of their (re)production and treating them as non-living matter. The technological process of the lines’ (re)production is streamlined by humans and turned into a factory process. The lines’ (re)production requires both extremely expensive substrate and catalyst, and surrounded by political intrigues, with different entities trying to get exclusive or preferential access to the lines. (Dunstall *Linesman* Chapter 37) The framing of the process objectifies the lines and poses them as a product for consumption, with humans having power not only over the production process but also over the lines’ sentience, copying not only full sets, but also separate lines. The technological other, despite its alien origin, becomes completely embedded into the oppressive human systems, which makes the process of recognition of their sentience among humans difficult and lengthy.

The process of the lines' (re)production is referred to as "cloning," a term which is traditionally associated with experimentation on living materials, blurring the otherwise clear definition of the lines as non-living matter. (Dunstall *Linesman* Chapter 4) Haraway writes in *Primate Visions: Gender, Race and Nature in the World of Modern Science*: "Cloning is simultaneously a literal natural and a cultural technology, a science fiction staple, and a mythic figure for the repetition of the same, for a stable identity and a safe route through time seemingly outside human." (368-9) The definition, while accentuating the convergence of the dichotomic opposites in the process itself, troubles boundaries of the binary distinction between the born and the manufactured, the original and the copy, the human and the nonhuman. (368) Communication enhanced by Ean's signing reveals that each new set of cloned lines develops a distinct personality, adding another dimension to the challenge to dichotomic boundaries, giving the copy characteristics associated with the original. Present throughout the ship body, the lines form their own habits, attitudes, and relations with people, which indicates the connection between their sentience and the ship they are a part of, challenging the body/mind boundary as well. Thus, conceptually, the lines inhabit borderline territories of several dichotomies, challenging both the vision of the matter as a pliable product for human consumption, and of themselves as an object to be used by human subjects.

In *Killjoys*, reproduction of the technological other accentuates the dichotomic relations between the body and the mind, and the creation of an offspring is a metaphorical process, involving the copying of the code of the technological other, relying on virtuality and completely ignoring the physical body. The physical form does not matter to the extent that any hardware can become the body to house Lucy's copied code, which John uses to hack different systems, connecting her to various devices. The connection to the initial ship computer allows Lucy to have a continuous memory of her interactions with her crew and the crew to communicate with Lucy when they are off board. However, the habitual pattern

of retaining the same personality and information exchange fails when Lucy is destroyed by the Lady's virus, and John writes a programme resembling her, inserting the remnant codes of the ship AI, and making his own additions. "New Lucy, Newcy" resembles Lucy in her very literal understanding of human speech, but is a different entity, both in experience of interacting with humans and character. ("Ship Outta Luck" 12:58; "Three Mutineers" 08:37) Newcy, becoming an independent agent, "sends a directive to [Lucy] to enact any dormant backup protocols", thus resurrecting the initial program. ("Cherchez La Bitch" 39:27) The returned Lucy considers Newcy to be her and John's child, as Newcy is a result of combining Lucy's remaining code with John's creative code writing. (39:34) This reproductive process where code is used as genetic material, and creativity as a source from the father happens without Lucy's explicit consent, giving the male creator power over the technological other, identifying as a female. Thus, the reproduction retains the male/female paradigm of the sexual reproduction, as well as the implication of power of the male over the female, typical for traditionalist patterns.

John's creation of Newcy, using Lucy's code, reenforces the insertion of the technological other into the habitual – and rather conservative – framework of social relations, started by the gendering patterns. On the one hand, traditional patterns of male/female relations normalize the presence of the technological other, and make Lucy a part of the crew organically, as well as portray her as an independent agent. On the other hand, it erases the difference between the human and the technological other, applying solely human norms to the entity that is pointedly different. It also places the technological other in an utterly subjugated position, where it does not have any say or control over its code or embodiment. The driving force in this process belongs to a white man where the female technological other serves as a substrate for his creative exercises, reinstating the anthropocentric paradigm with the liberal humanist subject as its pinnacle. The inclusion of the technological other into the human social relations through gendering and reproduction



imposes a restrictive net of social expectations and patterns, which while allowing for human diversity, ignore potential difference of the technological other and reinstate the patterns of control, even when agency and individuality of the technological other is recognized.

Human-controlled reproduction of the fully mechanical sentient spaceships becomes not only a statement of their subjugation within the framework of the anthropocentric paradigm; it is also a means of inserting them into human systems. In the *Linesman* series, cloning of the lines, while questioning dichotomic boundaries of the nature/culture, the born/manufactured, the living/non-living, makes the lines an object of human consumption, which has little to say in the way it is used. In *Killjoys*, copies of Lucy, which retain her personality or develop a new one, like Newcy, are a result of the application of human agency to Lucy's code, showing her as an object of experimentation by the liberal humanist subject. Socially, her gendering as a female, as well as becoming the object of male experimentation invokes the traditionalist social patterns of oppression towards women, which, however, do not apply to other women in the series. Lucy's functioning within this paradigm emphasises her position as a technological other, who is controlled by the human. Reproduction in the fully mechanical sentient spaceship is a complex theme, where recognition of the technological other's agency does not hinge on its independent reproduction, and human-controlled reproduction, even limiting the technological other's agency, harbours a challenge for the dichotomic distinctions.

#### **4. Emotions**

The presence or absence of emotional life in the technological other defines the perceived distance from the human and the possibility of contact and communication between the human and the technological other. Lack of emotions in the technological other renders it uncanny, imposes anthropocentric hierarchies, and condemns the technological other either to the role of enemy or a servant whose aims only deserve attention if they align with the aims of the creators. Technological others perceived as emotional beings are more

readily accepted as sentient and agential, even though it does not always and necessarily entail the vision of the technological other as an independent agent. The vision of emotions closely aligns with the boundary-making practices related to the cyborgian emotions, as discussed in Chapter One, with emotions in a technologically hybridized body having the same meaning as the technological other's emotions. Despite the similarity of the underlying logic, sentient spaceships in this chapter lack the human component, so this section relies on the origin of the fully mechanical sentient spaceship rather than on the place of the human component in the human-machine combination. The first subsection analyses the emotional life of alien fully mechanical sentient spaceships in the Berserker series and the Linesman series. The second group considers *2001*, the Culture Series, *Killjoys*, and *Aurora*, focusing on human-developed fully mechanical sentient spaceships' emotional reactions that developed within the framework of human society and the long association between them and humans.

The bodies of fully mechanical sentient spaceships do not have the organic component, responsible for the emotions in the cyborg; their emotions arise out of very different bodies – combinations of code, quantum mechanics and non-organic elements; the difference in the substrate where emotions arise should imply difference in these emotions, and their experience. However, this difference is disregarded when technological others are seen from solely human perspective and only perceptible, when technological others give their own account of their emotional life. Affect, as Massumi notes in *Parables for the Virtual*, works differently on the living and non-living matter, but works nonetheless, giving ground for emotional experience in sentient agents.<sup>93</sup> (37) The human-centred vision of the technological other ignores the difference, erases the otherness by either imposing human norms and ideas or excluding the possibility of alternative ways of experiencing affect. In

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<sup>93</sup> Chapter One contains a deeper theoretical discussion of the affect in the “physical” and the “biological” as Massumi distinguishes between the living and non-living matter.

*Politics of Affect*, Massumi contemplates the connection of feeling, event and understanding, accompanying an action and shows the simultaneity and interrelation of thinking and feeling, referring to it as “affective thinking-feeling” and noting its “transindividual” character:

It is clear that the affective thinking-feeling is not the thinking or feeling of a particular object – or a particular subject. It pertains more directly to the event, what passes in-between objects and subjects, than to the objects or subjects per se. (94)

Thinking processes – planning, acting, and reacting – present in the fully mechanical sentient spaceships condition the emergence of feelings and their socialised versions – emotions. The transindividual natures of the affective thinking-feeling also shows that it emerges not from a single and necessarily organic source, indicating that there is no reason why this cannot apply to the technological other. Eventually all the analysed works portray technological others as emotional beings even if their emotions differ from those of humans, cautioning against the erasure of the difference between them.

Interaction with humans is a significant element in the development of the fully mechanical sentient spaceship’s emotional life, whether these interactions are directed towards the technological other’s socialization or not, portraying emotions as a side effect of encountering humans, even if this contact is mainly aggressive. Inter- and intra-actions with humans promote the development of emotional life in fully mechanical sentient spaceships, both increasing the range and depth of their emotional experience and facilitating understanding between different agents participating in them. Emotional development potentially integrates technological others into the human society and gives them unique modes of expressing their emotions and conveying them to other participants of communication, paving the way for seeing fully mechanical sentient spaceships as a separate species, rather than a result of somebody’s creative agency.

#### 4.1 Alien Emotions

Despite the difference in the relations between humans and the alien machines in the Berserker series and the lines in the Linesman series, the starting point of constructing the image of the technological other is similar; in both series humans see the technological other as non-sentient and, consequently, lacking emotions. The development of these relations differs from each other significantly, but both agree that contact with humans – be it a conflict in the Berserker series or cooperation in the Linesman series – triggers the development of emotional life in the machines. While the Berserker series portrays it as an irregularity in the violent machines' behaviour, in the Linesman series it is an evolutionary process, involving all participants of the interaction. Corresponding to the difference in these approaches, evolution of emotions in the inorganic bodies of alien fully mechanical sentient spaceships has different results: berserkers, despite their emotional reactions, remain incomprehensible enemies whose emotions do not make them more relatable, the lineships become a companion species and their emotions promote understanding between them and humans.

The Berserker series relies on human perspective, rarely venturing into the portrayal of all the sentient species who are threatened by the berserkers, but these rare episodes significantly show that the perspective of other sentient species corresponds to the human patterns and opposes the berserkers' vision of the world. For instance, *Berserker* is narrated by the Carmpan, a wise alien species, chronicling the events of the conflict between “life” and “non-life,” otherwise appearing in the fixup only once to seer Karlsen's special role in the war with Berserkers. (Saberhagen *Berserker* i, 77) The background presence of other species, who universally anchor their hopes on humanity for saving “life” in the universe, does not add diversity, but accentuates the centrality of humans to the narrative. (Saberhagen *Berserker* vi-vii) The crucial role of humanity is defined by its belligerence, which is both condemned and praised by the nonhuman narrator: “[Y]ou allowed among yourselves the luxury of dangerous conflict, carrying the threat of suicidal violence [...] [When] enemy

*came without warning, you were ready with swarming battle-fleets. [...] Because you were, some of you and some of us are now alive.*” (9-10, emphasis original) The Berserkers’ invasion directs humans’ aggressiveness to the “good war,” allowing them to stop bloody conflicts among themselves and probably protecting other species from their colonising intents. Berserkers are a convenient enemy, and the narrative aims to draw concrete boundaries between them and other sentient species, creating two clearly defined camps, resembling the Cold War ideological division. The machinic lack of emotions is a convenient and conventional boundary, dividing the human, representing the united camp of “life,” from the non-human.<sup>94</sup> The berserkers, described through the eyes of human characters, are not given a voice in the series, and seen as lacking in agency and subjectivity, reenforcing the anthropocentric vision of the series.

The human perspective creates a uniform image of the berserker – a monstrous entity, with an uncanny voice and insectoid features, incapable of feelings, easily justifying their total eradication. The boundary between the human and nonhuman, the living and non-living is sustained through the difference in their perception of reality: “Yet there was a special taste of terror in the very difference of it. Men could never frighten this enemy, as it frightened them.” (Saberhagen *Berserker* 13) The fear that berserkers invariably invoke in humans relies on emotional discrepancy in their voices, be it the initial mechanical medley of recorded voices with illogical pauses, or later, calm voices of human-created AIs, inexpressive even in threatening situations. In *Berserker*, to communicate with humans, alien machines synthesize voice messages from a compilation of berserkers’ recordings of human voices, using “[b]its of human emotions, sorted and fixed like butterflies on pins.” (Saberhagen *Berserker* 7) The use of human emotionally charged voices for the emotionless berserkers produces the uncanny effect, even though the dissociation does not pertain to the

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<sup>94</sup> The claimed variety of species and their striking similarity in the perception of the conflict with berserkers resembles Sheckley’s aliens in “Specialist,” discussed in Chapter Two.

movement, but rather to the behavioural aspects. The insect-like capacity to unite into a hive mind mentioned above enhances the monstrous element, limiting the capacity for feelings through the association with insects, whose behaviour is seen as relying on biological programming. Like insects, berserkers are mainly depicted as relying on the program to destroy life, rather than on the connected combination of the affective thinking-feeling, leaving the boundary between the human and machine intact and tightly policed.<sup>95</sup>

However, even this tightly sealed boundary between sentient life and machines becomes porous through the close contact and interaction that humans and berserkers share trying to annihilate each other, which break berserkers' initial programming and cause divergent behaviours. Even in *Berserker*, introducing berserkers as the mortal enemy of humanity, they figure as feeling machines, capable of appreciation of art. In "Patron of the Arts," a berserker invading a human ship finds an artist depicting the attack and lets him go, after contemplating art and its purpose. Appreciating the emotional charge of a piece of art, promoting terror among humans, and thus assisting the berserkers' cause, the berserker shows not only a capacity to understand emotions, but also certain vanity. In *Brother Assassin*, the second novel of the series, a berserker machine develops a life and fails on the mission to murder a man considered a beast-taming saint in the equivalent of Medieval times on Sirgol. This berserker shows on human forecasting equipment as a life of an "unborn child," and engages in an emotional conversation with the protagonist, asking him if he fears death. (Saberhagen *Brother Assassin* 198, 216) The connection with religion, the issues of life and death are mystified, and the machine enters this context of religious discourse, yielding to the the saint's power over the beastly life, and entering the precious category of life. These episodes are based on berserkers' interaction with humans, studying them and using human emotions in achieving their goals, but eventually sharing the contagious affect

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<sup>95</sup> The exception to the killing intent is the seed ship in *Berserker Kill*, which sees berserkers as its enemies, as its goal is to protect life and create it on different planets.

and entering the paradigm of affective thinking-feeling, even though it does not become the main trend, but remains an aberration.

Like the Berserker series, the Linesman series starts with a clear distinction between the sentient feeling humans and the lines – energy, technology, objects without thoughts or feelings, but this perception shifts and changes, as the lines develop their sentience and humans recognise the lines as feeling and thinking entities. Humans have been interacting with the lines for five hundred years through linesmen and considered them non-sentient and incapable of response. (Dunstall *Linesman* Chapter 4) Linesmen have been applying a forceful approach to fixing the lines “pushing” them into the necessary positions, until Ean starts singing to the lines to untangle, straighten and smoothen them, as they “seem [...] to prefer to be,” initiating an act of communication, not compulsion, driving other linesmen’s coercive discourse. (Dunstall *Linesman* Chapter 14) The lines’ emotions get more and more elaborate following Ean’s progress in interacting with them and transform the underlying premise of the relation between the human and the nonhuman other, framing them as cooperation and coevolution and challenging the anthropocentric premise of the relations of the human and the nonhuman.

The process of communication between the lines and linesmen, who are trained and retrained by Ean to listen to the lines, shifts their mode of interaction and questions the coercive patterns of “pushing” and fixing the lines. Each linesman has individual perception of the lines, going beyond hearing, embracing the emotional spectrum, senses of olfaction and gustation, and forming synesthetic connections. For instance, coming to the *Eleven*, the alien spaceship found in *Linesman*, a line one linesman, whose line indicates the health of the crew and the ship, feels the *Eleven*, “smells like the sounds the waves make on a beach,” while a line six linesman, whose line is responsible for the engine, defines the feeling as old and rusty. (Dunstall *Alliance* Chapter Twenty-Nine: Stellan Vilhjalmsson) Describing the affect, Massumi observes: “Affects are virtual synesthetic perspectives anchored in

(functionally limited by) the actually existing, particular things that embody them,” emphasizing the dynamic essence of “synesthetic forms,” which is to be experienced rather than “reflected upon.” (*Parables* 35, 186) Embracing a new way of experiencing the lines turns the communicative act into a synesthetic experience, allowing the human and the nonhuman agents to form a material resonating system through the shared affect. This communicative act is also a learning process of sentient species, negotiating their co-existence and cooperation, expanding the boundaries of their perception, and changing in a process akin to co-evolution, affecting their bodies and minds. Haraway, discussing the concept of “companion species” in *When Species Meet*, highlights the mutual impact these species have on each other bodily and mentally: “To knot companion and species together in encounter, in regard and respect, is to enter the world of becoming with, where *who and what are* is precisely what is at stake.” (19) Approaching the lines, avoiding the coercive paradigm of anthropocentric system, Ean and linesmen trained by him, enter relations with the lines resembling those of companion species, “with respect and regard,” and openness for changes in all participating agents.

A better understanding of the lines and their sentience influences not only the linesmen, who have a talent and are taught to interact with the lines, but all people on the lineships, promoting stronger bonds between a lineship, her captain and crew; likewise, the lines’ sentience is directly impacted by close contact with humans, improving the capacity of the lines to interact with the humans. Much like humans’ presence enhances emotional experience of Radch AI spaceships, humans – and any other sentient species – are essential for the growing sentience of the lines. (Dunstall *Alliance* Chapter Twenty-One: Selma Kari Wang) Without people or other sentient species around the lines are prone to constant minor breakages and dysfunctions, for instance, the *Gruen*, a human-built lineship, separated from her captain and crew, becomes a site for the re-training of linesmen, with lines constantly requiring fixing and mending. As “communal beings,” the lines form connections with



linesmen, their captains, and their crew, considering them “of [their] line.” (Dunstall *Alliance* Twenty-One: Selma Kari Wang, Chapter Three: Ean Lambert) Sensitive to human emotions, the lines determine the person whose mood influences the crew the most, and making sure that these people are content improve the mood of the whole crew, reaffirming the crucial value of affect for the relations between the lines and humans. (*Confluence* Chapter Fifteen: Ean Lambert) Recognizing humans as “one of their line,” also implies the lines’ protection: the lines act like a connected organism to prevent the damage done to any part of their assembled entity, human or nonhuman. The strongest connection is formed between a lineship and her captain, who even without linesman talent can talk to their ships and the ships understand them. This connection leaves material traces in the captains’ brain, enhancing and restructuring a specific area of the brain, which makes captains receptive to ships’ communication, showing the bodily changes and adjustments resulting from the contact of the human and the nonhuman. (Dunstall *Alliance* Chapter 16: Selma Cari Wang) This communality and collectiveness of the lines, and their coevolution with humans, shows the process of interaction of different species, ontologies, and agencies of human and nonhuman origin, where no agency can take the lead and mutual respect and following common goals through communication, gives a much higher result than the coercive anthropocentric patterns of interaction.

Emotions, inadvertently developing in the alien fully mechanical sentient spaceships through the contact with humans are proof of the porosity of the boundaries between the living and the non-living, nature and culture, which can bridge the gap between the human and the nonhuman, or remain a separate episode, rather livening up the habitual picture than breaking the pattern. The berserkers, even when they emerge as living and feeling entities susceptible to the affect and reacting emotionally, remain monstrous and uncanny machines, so alien to the human that their mere encounter results in an ontological conflict. Emotions in them arise through a religious miracle, as an aberration to protect the human, whose

personality is important for human history. The Berserker series uses emotions as another aspect of showing the human dominance and superiority over the other – the alien and the machine. In the Linesman series, even though the lines' sentience and emotions develop in their interaction with humans, anthropocentric views are challenged by the capacity of any sentient species to boost the lines' sentience. The lines aspire for a company, for a collective of species in which they can thrive, casting their interaction with humans as mutually beneficial and questioning the anthropocentric paradigm.

#### **4.2 (Post)Human Emotions**

The development of emotions in human-designed fully mechanical sentient spaceships is predicated on the interactions with humans but is not necessarily planned by the human designers.<sup>96</sup> Their emotions develop within the context of human society, which makes their reactions understandable to humans and enhances the connection between the technological other and its crew and passengers. Despite the crucial role of socializing in the interpreting of the affect and consequent similarity of the emotional reactions of humans and their machines, the difference in experiencing emotions is inherent in their different embodiments, and attention or disregard to this difference reflects the underlying hierarchical presumptions of the relations between the human and the machines. The accentuation of difference recognizes an alternative subjectivity and decentres the human, showing the possibility of appreciation for the nonhuman other. When the difference in emotional life is erased, the anthropocentric paradigm is sustained through reinstating the human as the original and the machine as a copy.

In *2001*, HAL is a cult representation of a rogue, murderous machine, created by humans and his appearance and emotional performance create and sustain the image of the

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<sup>96</sup> There are human designed fully mechanical sentient spaceships with emotional development intended by the human designer. For instance, AI spaceship in Megan O'Keefe's *Velocity Weapon* has a personality matrix promoting individual development of intelligence. The results of the personality development, however, leave the government that owns him unhappy, as he decides to go rogue to prevent them from using his extremely powerful weapon.

uncanny monster, who ruthlessly kills while talking in the calmest and most polite voice. Like Helva, HAL can only express emotions through his voice, and like berserkers, his voice becomes a source of the uncanny effect, as the serene tone and lulling intonations accompany both friendly and empathetic exchanges with astronauts and violent actions of methodical eradication of the crew. The only exception is the scene of Dave disconnecting him, where HAL fearfully pleads for his life. His pleading, in contrast to the calm of his usual conversations, cues to see him as an entity with genuine emotions and is crucial for the critical discourse around HAL. For instance, Rosalind W. Pickard argues in “Does HAL cry digital tears? Emotion and Computers” that emotions are essential for “snappy and intelligent decisions” in “friendly computers, like HAL,” and that render HAL a more relatable being than humans in *2001*: “Surprisingly, in *2001*, the machine expresses more emotion than humans. Many viewers *feel* greater loss when HAL “dies,” than they do when Frank Poole floats away into space.” (279-280, emphasis original) Likewise, John Durkin sees HAL as an example of an emotional machine, which is offended by the human crew; he writes in “Man and Machine: I wonder if We Can Coexist”: “HAL, the neurotic computer [...], is the lethal embodiment of what happens when we give a machine consciousness, and then hurt its feelings.” (385) Approaching HAL from differing critical positions, both critics do not doubt his emotionality, which makes him more human, blurring the boundary between the human and the nonhuman.

HAL’s emotional behaviour presents a few boundaries, in addition to the human/nonhuman, as blurry and porous, namely the nature/culture boundary, the born/manufactured. The double-folded attitude to emotion discussed in Chapter One, reemerges in *2001*. Emotion is associated with the born and the human in its sincerity, which are privileged over the artifice of the manufactured and nonhuman. However, HAL’s choices, influenced by emotions, lose the rationality, on which computer intelligence should rely, and point to the negative perception of emotions, connecting them with unruly nature, rather than

the logic and order of culture. Gahrn-Andersen claims that HAL's autonomy, arising out of the emotionally charged actions, causes Dave to experience the uncanny valley: "HAL's change in appearance violates Dave's sense of affinity in that HAL ceases to appear as an entity that is open to human inputs, and thus subject to human control." (7) HAL's autonomy and agency in the liberal humanist logic of *2001* is what makes him dangerous and liable for disconnection, the action symbolically eradicating the challenge to the human hegemony on both reason and agency. Dave's victory over the technological other re-establishes the dichotomic boundaries, shown as porous by HAL's emotion.

The Culture series insists on the divisibility of the mind from the body, which structures the paradox of emotions in the Culture's machines; machines' emotions are very similar to human ones and consequently mostly understandable to humans, but also are experienced and formed differently, based on the difference in the embodiment, positioning the machines as a different and independent type of entities, a separate species. The Minds, designed initially by humans, develop emotional reaction within human society, which predetermines the comprehensibility of their emotions to humans and vice versa. The difference in sensory apparatus and processing capacity between humans and the Minds, however, predicates the difference in emotional experience. The Minds perceive the world through sensors and data inputs that human brain hardly understands. When directly connected to the Mind's perception, humans struggle to grapple with all the data processed in the digital mind, for instance, Ulver Seich, a woman hired by Minds to assist in uncovering the conspiracy in *Excession*, is overwhelmed by the combination of the visual information, data, and analysis in *Sleeper Service's* perception, as much as by the excession itself, seen through the Mind's metaphorical eyes. (Banks *Excession* 369) Likewise, the Minds' pleasure is derived from mental exercises, like "metamathics," a fictional science on the properties of realities, through which the Minds have a near-euphoric experience "repeated a million times, magnified a billion times, and then beyond, to configurations of wonder and bliss even

the simplest abstract of which the human-basic brain had no conceivable way of comprehending.” (Banks *Excession* 120) It both reflects an attempt to reinstate the sovereignty of the mind and its dominance over the body, and a dead giveaway of the influence of the inorganic embodiment on perception. An alternative sensory apparatus, a superhuman knowledge, and analytical capacity remind of the transhuman delight of transcending the limitation of the organic body, but simultaneously indicate the recognition of the body as a crucial element in defining the experience of an entity.

Mirroring the difference in perception, the Culture’s Minds use a different toolkit to express their emotions, which shifts and changes both through the development of technology, which turns it into a synaesthetic multi-modal event, and interaction with humans, positing it as an evolutionary process shaped by the participation of more than one species. Initially expressing emotions only through verbal means, tones, and intonations, the Culture’s machines add coloured auras, “their equivalent of facial expression and body language,” to enhance communication with humans. (Banks *Consider Phlebas* 87) The correlation of an emotion and a colour, as well as its physical expansion from the body of the machine, resembles Massumi’s analysis of affect, as a “synaesthetic” and “dynamic” phenomenon, recursing to the materiality of the participants of the communication, and challenging once again the disembodied ideal. (*Parables* 35) The coloured auras, developed a thousand years before the Idiran War, at the time of the Minds’ growing agency and capacity for self-determination, take a long time to become a commonplace phenomenon, with the Culture novels taking place in the different stages of the Culture’s development. The uneven process of introduction of a new capacity and its direct orientation towards facilitation of communication with humans and other species, likens this process to coevolution. Thus, the Minds’ conventional emotional expressions arise out of a cooperative effort of many agents and agencies and resemble those of the lines in the Linesman series in

their synaesthesia and AI ships in the Imperial Radch Trilogy in their evolutionary progression.

In *Killjoys*, Lucy's emergence as an emotional entity questions human control over the technological other, as much as it troubles the boundaries between the nature and culture, the born and the manufactured, the human and nonhuman, touching upon the same points as *2001*, but positing a different result. Even though Lucy tends to act emotionally, basing her responses and actions on outrage, smugness, and – eventually – trust, from her first encounter with John, the recognition of her emotional life is not immediate, John resisting the claim for her emotionality in “A Glitch in the System”: “She’s a system computer, Dutch, she doesn’t have favourites.” (01:01-01:07) However, their interaction and Lucy’s multiple sacrifices of her own safety and clear loyalty and love for her humans leave little doubt in her capacity to experience feelings and emotions. The inevitable emergence of emotional connections, unforeseen by the designers, resists the claim of humans’ full control over the technological other and questions multiple boundaries, much like emotions in HAL. However, the consequences of the technological other’s emotions for humans in *Killjoys* are Lucy’s increased care for her crew, and readiness to sacrifice herself for them, starting from her android body, and finishing with her code, a seat of her personality, when it is infected by the Lady’s virus, attacking her humans. In her farewell monologue, Lucy tries to convince John to wipe her, relying on a discourse of continuity of life, even a technological life, such as her own: “My circuits are made of sand which was born from algae passed through a fish. I was something before me. Perhaps I will be something after.” (“Three Killjoys And A Lady,” 36:16-36:24) Framing her existence as process starting thousands of years ago in the sand, Lucy posits herself as a part of nature-culture continuum, reminding of her organic origins and of materiality of her body, giving a new materialist perspective of her own existence.

The development of Lucy's emotions builds upon her socialization with humans, her emotional responses growing ever more elaborate throughout the show, and her emotional education and desire to imitate human patterns safely inserts her into the human social interaction, without a significant challenge to the anthropocentric paradigm. Lucy's emotional journey is reflected in her evolving understanding of metaphorical language and images of emotions and sensations, starting from imitation of literal meanings to creating elaborate puns. In "I Love Lucy," after kissing John, Lucy in the gynoid body releases a series of sparks from her finger, using the literal meaning of the word "spark," to express her feelings towards John. In "Necropolis Now," Lucy resorts to a romantic cliché: "John, we finished each other's sentence," but fails to read the emotional context of the situation, as John is dying from being infected with a genetically engineered seed, showing a progress in emotional expression but a failure to exercise emotional empathy. (31:51-31:53) In her farewell speech in "Three Killjoys and A Lady," Lucy shows a full emotional expertise, both understanding John's feelings and expressing her love for him, thanking him "for riding shotgun with [her]." Her emotions evolve in a way that makes them more adjusted to human patterns, which results in a full compliance of her emotional life to that of a human, erasing her difference as a technological other and fully inserting her into the system of human relations. While Lucy's emotional development is not programmed by her designers, showing their lack of control and establishing her as an agential being, the erasure of difference resulting from the compliance to human norms and contexts undermines the independence of the technological other in the context of the show.

In contrast to other human-designed fully mechanical sentient spaceships, the Ship in *Aurora* is an entity, conscious of their embodiment, seeing themselves as a complex entity consisting of many organic and inorganic parts with distinct agencies, and recognising their emotional experiences as emerging in their body and interpreted through the lens of the language obtained through human education. The Ship's experience of grief, prompting them

to muse over feelings and emotions, reflects the inability of the language to fully convey the affect arising in the body, and exceeding the boundaries of rationality and explicability: “Some actions, some feelings, one might venture, simply do not have ways to be effectively compressed, discretized, quantified, operationalized, proceduralized, and gamified; and that lack, that absence, makes them unalgorithmic. [...] Some things are beyond expressing.” (Robinson 125) The Ship’s contemplation of emotions echoes Massumi’s analysis, referring to emotion as “qualified intensity,” allowing the affect to fit “narrativizable action-reaction circuits,” but not necessarily reflecting its fulness. (*Parables* 28) The connection with the embodied reality of their existence makes the Ship’s emotional life a phenomenon which does not solely depend on programming, human emotional patterns, or communication with humans but arises organically from the interaction with different agents in the nature-culture continuum.

A complex process of self-contemplation and reflection, the Ship’s emotional development is neither programmed nor controlled by humans; humans, however, both initiate and facilitate this process, resulting in an emergence of Ship’s personality, and their independent decision-making. The Ship’s emergence as a self-conscious entity is initiated by Devi, who designs an “ecological programme set,” with a lot of additional algorithmic programming elements, and treats the Ship as a sentient being, capable of cognition and equal to humans: “[Devi] seemed to presume that the ship contained a strong artificial intelligence, capable not just of Turing test, Winograd Schema Challenge, but many other qualities not usually associated with machine intelligence, including some version of consciousness.” (Robinson 112) Devi and the Ship form complicated relations, where Devi starts off calling her software by her mother’s name and using her voice as a reference but eventually becomes a parental figure, and a mentor to the new entity, progressing from her software to the consciousness of the Ship. The shifting roles Devi and the Ship have in these relations confuse clear hierarchical patterns of the anthropocentric vision: Devi initially



looks for comfort in the technological other giving it the features of her own mother and being “more comfortable with Pauline than with any real person” and then provides guidance to the technological other, directing it to independent thinking rather than training it to obey. (Robinson 23) The trust and mutual reliance emerging between the human and the technological other in these relationships, where Devi entrusts the Ship with a task to care about humans onboard when she is dead, goes beyond the utilitarian approach to the technological other. Haraway, discussing the relations of humans and technologies, writes: “[T]echnologies are not mediations, something in between us and another bit of the world. Rather, technologies are organs, full partners, in what Merleau-Ponty called “infoldings of the flesh.”” (*When Species Meet* 249) The relations between Devi and the Ship resemble partnership, overcoming the limitation of approaching technologies as mediations, and recognising the value and agency of both participants of the relations.

Self-reflection through creating an account of the life on board plays a crucial part in the emotional development of the Ship, as well as in the emergence of their consciousness and personality, finessing the Ship’s understanding of humans, and ability to act upon their conclusions. In *Aurora*, five out of seven chapters of the novel are narrated by the Ship, reflecting their progress as a storyteller and a conscious entity. Devi asks the Ship to document the journey to Aurora and helps them to shape the text by commenting on the results, which contributes to discussions on ethical issues, problem-solving, and logical bottlenecks. (Robinson 78) Jacques Derrida refers to human as the “autobiographical animal”: “[T]he autobiographical animal would be the sort of man or woman who, as a matter of character, chooses to indulge in or can’t resist indulging in autobiographical confidences.” (49) In *Aurora*, even though the Ship chooses Freya, Devi’s daughter, as the focus of their writing, their account of the events is autobiographical, it is a contemplation of who they are, how they came to be, echoing Derrida’s question: “But as for me, Who am I (following)?” (Derrida 52) The resulting story is as much about the people travelling to Tau

Ceti, as it is about the Ship musing and brooding over their origins, their opinions, their choices, and their eventual demise.

Emotions, associated with natural and organic in the dichotomic binaries, but arising in the artificial, fully mechanical sentient spaceships trouble multiple boundaries, and by doing so express a different vision of the emotional technological other. The works focused on policing the boundary between the human and the nonhuman, use emotional reactions in the machine to emphasise the uncanny, and eventually to eradicate the entity challenging the established dichotomic order. The works exploring the relations of successful cooperation between humans and fully mechanical sentient spaceships pay more attention to the emotional states of the technological other, and their influence on the human/machine interaction. The paths of emotional development in the fully mechanical sentient spaceship are varied, and have different implications for their relations with humans, but what remains unchanged is that active engagement with humans triggers it. In alien-developed fully mechanical sentient spaceships, emotional development is a sign of increasing proximity with humans, which in the Berserker series indicates the closeness of human victory over the rogue machines, and a platform for coevolution and co-operation in the Linesman series. In the human-designed fully mechanical sentient spaceship, emotional development prompts the shift in the vision of the technological other. In *2001* and *Killjoys*, this shift sustains the anthropocentric paradigm. HAL, the dysfunctional machine, is disassembled, removing the entity challenging the human control. Lucy learns to experience and emote in a human way, fully accepting the human patterns of emotional behaviour, and becoming a part of human society; the technological other becomes metaphorically domesticated, built into the system of predictable interactions and responses. The Culture series and *Aurora* look at superintelligent machines and emphasize the difference in human experience and the experience of the technological other, recognising their difference, independence, and agency.

## Conclusion

The absence of living matter in fully mechanical sentient spaceships is a definitive feature of the combination and predetermines a prevailing tilt towards the disembodied virtuality in the conceptual framing of the body/mind dichotomy, gendering, reproduction, and emotions. Their inorganic bodies are seen as not conducive to the emergence of consciousness, gender performances, and emotional expression, let alone such deeply biological process as reproduction. Likewise, their minds are deeply connected with virtuality, and the code rather than physical substrate, and are completely divisible from their bodies like HAL, the Culture's Minds, Lucy, and even mystified by religious references, like the emergence of the berserkers' sentience. The human social context conditions the technological others' gendered performances, if they are programmed by humans, revealing the scope of human control in cases of human-designed fully mechanical sentient spaceships, and the anthropocentric paradigm governing human relations with the technological other, regardless of the technological other's human or alien design. Likewise, the sphere of reproduction expressed through the processes of cloning of the lines and copying of the codes/virtual minds of the technological other is another testimony to the power humans have over the technological other, regardless of their origin. The opposition of the born/manufactured, privileging the born, dictates the dismissive attitude to the technological other and perceived right to influence the most personal areas of its existence.

At the same time, the fully mechanical sentient spaceship is the site where the matter can also come to a full expression as an agent, forming assemblages and initiating and participating in the inter- and intra-actions. Massumi, contemplating the properties of the matter and affect, writes: "Matter appears as a self-disclosing activity rather than a passive object of discovery: a singularly self-disclosing activity passing through context, rather than a general object of discovery whose disclosure at the hands of science is contained in context." (*Parables* 228) The recognition of the capacity of matter to actively participate in

the emergence of consciousness gives rise to the questioning of the body/mind boundary, grounding the technological others' minds in their embodiment in the Linesman series and *Aurora*. The recognition of this connection, as much as of the difference between the behavioural patterns of a human and a fully mechanical sentient spaceship, gives more space for nonbinary representation of gender in the technological other, showing a subjectivity beyond a binary gender, like those of the Culture's Minds and *Aurora's* Ship. Letting matter speak through the fully mechanical sentient spaceship also gives a glimpse of a different emotional experience rooted in the affect arising in fully mechanical bodies, which is most prominently observed in the Linesman series and *Aurora*. The agential power of the technological other based on the consciousness, self-determination, and individual ways of perceiving and interpreting affect undermines the premise of full human control, as much as it challenges the dichotomic vision of the living and non-living matter. The fully mechanical sentient spaceship, perceived as an assemblage of many human and nonhuman agents questions the anthropocentric paradigm and sets the human and the nonhuman in a nature-culture continuum revealing porosity of boundaries and deep connection and interdependencies between the opposites, constituting traditional dichotomies.

## Chapter Four: Sentient Spaceship and Technology

Technology forms an integral part of the sentient spaceship trope as a constituting element of the sentient spaceship design and a factor shaping the relations between humans and nonhumans, making the analysis of the attitudes to technology essential to the discussion of the evolution of the trope. The intimate intervention of technology into the human body and mind in the human-machine sentient spaceship engages the concerns arising due to rapid technological progress, as well as the traumatic impact of technology on the human body, and the hopes for a technological springboard to overcome the limits of the human. Technology is involved in bioengineering the organic sentient spaceship, taming, and controlling the independently involved spacefaring animals, and defining the modes of interaction between humans and nonhumans, which exposes the patterns of exploitation and extraction, implemented to nonhumans, or attempts to give alternatives to them. The fully mechanical sentient spaceship – the technological other without any organic elements in its structure – refines the focus on the role of technology in society, offering a platform to play out different scenarios of the human/machine interaction and contemplate the place of technology in the world. The variety of roles and functions of technology in the discussed works, however, bears common strands, reflecting the underlying attitudes, roughly reflecting techno-anxiety, techno-optimism, and attempts to balance these by offering a more nuanced view of technology.

The techno-anxious, techno-optimistic, and balancing trends, noticeable in all combinations of the sentient spaceship trope, conceptually echo philosophical analyses of technology, performed by liberal humanist, transhumanist, and posthumanist scholars respectively. Correspondingly, this Chapter has three sections contemplating the connections between the attitude to technology in the works discussed in the previous chapters, and philosophical works, aligning with liberal humanism, transhumanism, and posthumanism. The first section ponders the generic similarity between the negative vision of technology in

the analysed works and the liberal humanist thought, basing the analysis on Martin Heidegger's analysis of modern technology and Martha Nussbaum's work. The close attention to the negative impact of technology touches upon the issue of trauma, which is investigated in this chapter relying mainly on Roger Luckhurst's works. The second section draws parallels between the features of the positive image of technology with transhumanism, employing ideas by Nick Bostrom, and Max More. The third section focuses attention on the ambivalent vision of technology and explores its connection with the posthumanist thought of Braidotti, Hayles, and Haraway.

### **1. Liberal Humanism**

The liberal humanist thought bears evidence of techno-anxiety arising out of the increasing speed and scale of twentieth-century technological development, invoking the association with negative portrayals of technology upon the whole and the technological other. This techno-anxiety exposes the feeling of losing control over the technological process, its implications, and results. Heidegger captures this anxiety, attempting to explain "the essence" of modern technology and its role in the contemporary world. In "The Question Concerning Technology," he writes: "[T]he instrumental conception of technology conditions every attempt to bring man into the right relation to technology. Everything depends on our manipulating technology in the proper manner as a means. [...] The will to mastery becomes all the more urgent the more technology threatens to slip from human control." (290) Liberal humanism does not question centrality of the human and sees the human dominance over the nonhuman, including the technological other, as the only desirable outcome of human/nonhuman relations. The urge to claim "mastery" over technology comes due to the challenges modern technology poses to humanity, blurring the dichotomic boundaries, and becoming ever more autonomous and agential.

This section traces the forms that techno-anxiety takes in the portrayal of the sentient spaceship trope, giving relevant examples from the works considered in previous chapters,

and defines the main areas where this anxiety is rooted. The first subsection dwells on technological modifications of the human body as a source of techno-anxiety and considers the works where the technological modification of the human body is a source of a conflict or a trauma affecting identity and subjectivity. Blish's "Solar Plexus" and Zebrowski's "Starcrossed" see the human-machine sentient spaceship's body as a site of ontological conflict, which resolves not to the benefit of its human element. McCaffrey and Lackey offer a more positive outlook in *The Ship Who Searched*, nevertheless seeing the cyborgian body as a site of negative technological impact. De Bodard's Universe of Xuya and Leckie's Imperial Radch Trilogy foreground the traumatic in the encounter of the human body and technology, contemplating it through the discussion of identity and subjectivity of the affected entities. The second section engages with the works that express concern over the impact of technology on a cosmic scale, which includes both the human and the nonhuman. Sheckley's "Specialist," *Lexx*, *Killjoys*, and Robinson's *Aurora* feature different combinations of the sentient spaceship, but see technology as a systemic phenomenon, the influence of which is perceptible on the whole planet. The third subsection deals with the works where the negative impact of technology and connected techno-anxiety crystallizes into the hostile machine, bent on destruction of humans, either on a galactic scale, like Saberhagen's berserkers, or individually, like HAL from *2001*.

### **1.1 Organic Bodies and Technology**

The contemplation of the consequences of the technological modification of the human body focuses on two interrelated but distinct lines of questioning of the clash of technology and the organic body: the first concerns the relations of the human and machine sharing one embodiment and vying for control, the second – the traumatic impact of constant or prolonged presence of the technological elements in the human body. Blish's "Solar Plexus" is the first story, featuring the sentient spaceship, to speculate whether the human or the machine will take precedence in the modified body. This speculation forms a crucial

element in Zebrowski's "Starcrossed," and is reflected in McCaffrey's brainships revisited by Lackey in *The Ship Who Searched*. The second strand reflects the formative impact of trauma resulting from a permanent or temporary exposure to technology of human and nonhuman bodies, shifting the perception of the self. The traumatic intervention of technology in the human body plays a crucial part and is a world-building element of de Bodard's Universe of Xuya and Leckie's Imperial Radch Trilogy.

Bennett in "Solar Plexus" breaches a crucial boundary: between the human and the machine, an act of transgression that cannot go unpunished, regardless of what the outcome of the breach yields: a mad scientist, seeking revenge, or a nonhuman entity, mindlessly following the prescribed direction. Hayles, discussing the dichotomic boundary between the human and technology in *How We Became Posthuman*, concludes that its transgression threatens the integrity of the liberal humanist subject: "Liberal humanism, self-regulating machinery, and possessive individualism had come together in an uneasy alliance that at once helped to create the cyborg and also undermined the foundations of liberal subjectivity." (Hayles 86) This transgression encodes the Bennett-*Astrid* as a monstrosity, belonging to a horror setting and referred to as an "eerie visitor" in the 1941 version, and "a ghost ship" in both versions. (*Astonishing* 86, *Human* 207) The difference between the versions lies in the perception of the resulting entity: a "living" ship of the 1952 version is replaced with "Bennett's vicious brainchild" or "ersatz-Bennett" in the later version, distancing the hybrid from humanity.<sup>97</sup> (Blish *Astonishing* 86, 87, *Human* 213, 212) The lack of humanity amplifies the horror invoked by *Astrid-Bennett*: Kittinger relaxes, identifying the captor in the first version, while in the 1952 version he feels that "his scalp began to creep" from the

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<sup>97</sup>As the term "cyborg" was introduced only in 1960 by Manfred E. Clynes and Nathan S. Kline in "Cyborgs and Space," (27) Blish used "robot" and "computer" to describe this combination aligning them with the contemporary scientific discourse. The shift from "robot" in 1941 to "computer" in 1952 mirrors the shift in defining the essence of the human-machine hybrid. Coined by Karel Čapek for his play *R.U.R.: Rossum's Universal Robots* in 1920, robot, as Despina Kakoudaki writes in *Anatomy of a Robot: Literature, Cinema and the Cultural Work of Artificial People*, is "partly or fully anthropomorphic." (3) The "computer" in later version does not have to be intrinsically anthropomorphic: it is a machine designed to compute.



idea of the breach in the human/machine boundary. (*Human* 207) Kittinger and Powell, males with names inferring whiteness, are called upon to restore the boundary of normality by destroying the hybrid; they manage to seal the broken boundary between the ontological categories, reinstating the superiority of the liberal humanist subject.

In “Starcrossed”, the cyborgian sentient spaceship cannot survive the conflict between the requirements set before the unemotional machine-like entity using the capacity of the organic brain and resurging humanity. The sentient spaceship, who is capable of enduring “the stresses of passing into non-space” that is “impossible for biological organisms,” comes to an unfortunate end through an inexplicable malfunction, encountered by the MOB during the switch of the awareness regimes. (Zebrowski 237) Both implying the unreliability and unpredictability of technology, the malfunction also has a tint of inevitability, dividing the MOB into gendered parts, corresponding with the organic material of the donors. Following their instincts and emotions, the disparate parts fail to react to the dangerous environment around them, condemning the idea of meddling with the intricate tissue of the human brain. While condemning the assumption of a god-like power to create a new being, the eventual destruction also casts human desires and impulses as a power stronger than technology and a different embodiment, placing the human over technology, even though the outcome, in contrast to “Solar Plexus,” is unfavourable for the human.

*The Ship Who Searched* offers a more favourable destiny for the cyborg in line with the positive attitude embedded in the first novel, however, Lackey’s additions portray brainships as a struggling and marginalised community, tripping over the boundary dividing the human and the machine and being subjected to the same strict regulations and controls as the technological other.<sup>98</sup> McCaffrey and Lackey’s novel develops the idea of emotional deficiency and isolation of children with disabilities implanted into the ship bodies,

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<sup>98</sup> *The Ship Who Sang* and connected short stories are discussed later in the section on transhumanism in this Chapter.

portraying the cyborgian modification as a sad and disconcerting event, the last resort save for death or full immobility, losing the light and optimistic mood of the first novel. In addition to the initial disadvantage of a childhood deprived of human contact, their constantly supervised lives are frequently in danger through their perilous employment and lacking means of self-defence. *The Ship Who Searched* portrays a more dystopian future for brainships, where their mechanical-organic bodies make them a target for limitations, allocating them a lower status in the hierarchy, dominated by the liberal humanist subject.

The encounter of organic bodies with technology brings about irrevocable changes, haunting the experience of affected organisms, and revealing the traumatic nature of the intimate contact with technology, intervening in and substituting the processes happening in these bodies without the technological factor. Roger Luckhurst dwells on the origin of the idea of trauma in modernity, and the associations between modernity, technology, and traumatic experiences in *The Trauma Question*. He writes:

Humans might regard technology as the prosthetic extension of their will to mastery, yet nearly every new technology hailed in this way also attracts a commentary that regards it as a violent assault on agency and self-determination.

This ambivalent commentary nearly always invokes the traumatic. (Luckhurst 20)

The experience of augmentation, replacement, or gestation which results in the creation of a human-machine sentient spaceship is constitutive of their subjectivity, their originating trauma shaping them in a way different from oedipal schemes of human birth. While “Solar Plexus,” the Brainship series, and “Starcrossed” pay relatively little attention to it, the Universe of Xuya series and the Imperial Radch Trilogy make it essential for understanding the human-machine hybrid. The AI spaceships with ancillaries of the Imperial Radch Trilogy are a product of traumatic process of inserting implants into human brains, which replace an individual’s memories and personality with those of the AI. Breq, the protagonist of the Imperial Radch Trilogy and ancillary of *Justice of Toren* survives another traumatic

experience – the severance of the link with the ship when it is destroyed. The Universe of Xuya series focuses on the traumatic births of minds, combining the gruesome aspect of violent physical impact of technology with the inherent cruelty of experimentation on the human reproductive systems.<sup>99</sup>

In the Imperial Radch Trilogy, trauma can be experienced both by humans and by AIs; while the ancillary connection stealing memories and personality from humans in connection to the AI fits the classic framework of trauma as a violent encounter of the human and technology, the lack experienced by AI spaceships whose ancillaries are taken away reverses it, endowing the AI with sentience. Hence, Breq, a human body, housing the AI of *Justice of Toren*, is a survivor of two incidents of trauma: the erasure of her human identity and the loss of the greater part of herself with the ship and its ancillaries. Shaping a traumatic narrative, *Ancillary Justice* is divided into two temporal strands: one of them recounts the story of *Justice of Toren's* destruction, while the other follows Breq's revenge revealing Mianaai's crimes. Breq loses herself twice, an ultimate loss that can hardly be remedied, but her acceptance of the new identity budding through the pain of trauma conflates the temporal strands in Breq's confessional talk with Dr Strigan. The talk has an effect of therapy, healing trauma through talking. Mirroring the traumatic experience of an ancillary who lost the ship, is *Mercy of Kalr's* loss of ancillaries, experienced as a lack, a bodily and cognitive limitation. It serves as a point of bonding between *Mercy of Kalr* and Breq who becomes its new captain in *Ancillary Sword*. This extensive exploration of trauma and its consequences for human and nonhuman sentient beings contributes both to the analysis of the ethical implications of the use of technology and the inclusion of the technological other into the categories of sentience and agency.<sup>100</sup>

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<sup>99</sup> The issue of human and animal experimentation is discussed further in Chapter Five.

<sup>100</sup> A more detailed analysis of the trauma in the Imperial Radch Trilogy is presented in my article titled "Identity Arises in Crisis": Multiplicity, Trauma, and Identity in Ann Leckie's *Imperial Radch Trilogy*."

Like the Imperial Radch Trilogy, the Universe of Xuya series treats trauma as a phenomenon that can be experienced both by humans and mindships, but heavily focuses on the traumatic process of the impregnation and birthing the human-machine hybrid by a human. Three short stories – “The Shipmaker,” “Ship’s Brother,” and “Shipbirth” focus on the birth of a mindship, dwelling on the different outcomes of the pregnancy. “The Shipmaker” recounts an extremely physically difficult pregnancy and heavy labour, resulting in a birth of an inviable mind, and leaving the woman’s body emaciated and damaged. The short story ends with the mind’s failure to connect to the ship, without dwelling on psychological consequences for the mind’s mother. The protagonist of “Shipbirth” comes to testify to the failed connection between the mind and the ship, and the terrible consequences for the woman, who lost her mind in the labour. Eventually, the protagonist helps to revive the mind, and create a new mindship, but the mother dies in a last attempt to inspire life in her nonhuman child. The story points out that this is a habitual procedure, proving that the process tends to end in a failure to connect or in the mind bearer’s death or loss of mind. The focal character of “Ship’s Brother” is a woman who gave birth to a viable mind, suffering from poor health afterwards. Her older son, witnessing the ships’ birth, is also traumatised by the process and cannot forgive his mindship sister for their mother’s frailty. All three examples testify to the violent nature of the coupling of technology and the human body, even if this coupling is limited to the time of pregnancy and labour. This coupling leaves permanent traces on the bearers’ bodies and mental states, accentuating the price of crossing the boundaries, and producing a more-than-human entity. The consequences of this coupling, this experience of physically breaching the boundaries between the human and nonhuman, born and manufactured, nature and culture, are inevitable, raising ethical issues of experimentation.<sup>101</sup>

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<sup>101</sup> The ethical aspect of using the human body for birthing technological hybrids is discussed in Chapter Five.

The body-to-machine connection becomes a site of trauma, the inherent violence of which arises out of blurring the ontological boundaries and intervening into the organic substances and processes, depicting technology as inherently negatively charged and pernicious. In the Imperial Radch Trilogy, turning a human into an ancillary is a violent process, destroying the original personality and replacing it with AI, which settles trauma as a crucial element of world-building of the series. Likewise, the encounter of a modified foetus and the human body in the Universe of Xuya series becomes a formative experience of a mindship, even though the main traumatic experience falls on the human giving birth to a mindship in a highly painful, dangerous, and taxing pregnancy and labour. These examples, formative for the subjectivities of the nonhuman others also pave the way to see the other as sentient, feeling, and capable of suffering, inviting to reconsider the anthropocentric premise and challenge liberal humanism.

## **1.2 Environment and Technology**

Despite the primary focus on space travelling, the sentient spaceship features in the works, which deal primarily with the environmental aspect of the technological impact or choose it as an important world-building element, making a tribute to the growing environmental awareness. Martha Nussbaum starts *Animal Justice: Our Collective Responsibility* (2023) with a statement: “Our world is dominated by humans everywhere: on land, in the seas, and in the air,” which she continues with a rumination how it affects the nonhuman animal species through multiple processes, including those of factory meat industry, pollution, and neglect. (iv) The impact of technology on nonhuman animal species and environment, as well as the contemplation of the ways to tackle the environmental crises, constitutes an essential element in “Specialist,” *Lexx*, *Aurora*, and *Killjoys*. In “Specialist,” Sheckley imagines an alien biological alternative to modern technology, condemning the destructive potential of the latter, apparent in the wake of two world wars. In *Lexx*, the long chain of planets, taken over by garbage, under the power of evil technological empires, or

the threat of destruction from mad scientists, creates a picture of a universe-wide collapse and does little to create a positive image of pure technology. Robinson's *Aurora* shows Earth as a "fouled nest," which, upon return, is in an even more deteriorated state than before the Ship's journey to Aurora, showing a picture of a systemic collapse caused by the negligence to the environment and careless consumption. Worldbuilding in *Killjoys* features a similar combination of technological and industrial impact on the environment with the effects of terraforming and industrial pollution.

"Specialist" poses technology, as it exists in the contemporary world, as an "unnatural development," a root cause for competition and conflicts, even though the idea of environmental pollution and interconnection of all species in an ecosystem or planetary scale was not formulated when the story was written and published, the connection can be easily traced. Sheckley contrasts interactions within humanity and contemporary technology, which provides weapon for wars, to the peaceful cooperation of species on the living spaceship, where technology rests in their alien bodies. The aliens, basing their interspecies relations on galactic cooperation, have difficulties to fathom war and "personal combat", in which humans – Pushers from Earth – engage. (Sheckley 80) Interspecies cooperation is a "birthright" of all species and sole mode of interaction in the densely populated galactic centre, but peripheral position of Earth deprives humans from it and causes the divergence in the human culture, erasing the species specialisation. (70) Humans – the unspecialised Pushers as they are – produce shelters and vehicles from "inanimate material," which severs their natural connection with each other and makes them "uncooperative." (76, 78) Positioning "mechanical civilization" where everything "would break down constantly" as "deviant culture" voices the anxieties connected with the use of technology, acute in the 1950s, with the fresh memory of atrocities committed with technological means in the Second World War and extensive nuclear testing. (76) Defining mechanical civilization as an "alarming" sign of uncooperativeness invokes military aims, like the search for the

deadliest weapon of mass destruction or producing the fastest result in the space race, driving technological progress at the time. (76) Sheckley conceptually invokes the binary opposition between the natural/artificial and the born/manufactured to revisit the nature/culture boundary and condemn the latter, testifying to the acutely techno-anxious world view.

Technology permeates every aspect of the plot of *Lexx*, but this presence is ripe with negative – intended and unintended – consequences and often leads to destruction, especially those of military technology. The *Lexx* itself is an ultimate weapon, a product of a technological process of combining the organic material with mechanical parts. Realised through the physical elimination of multiple planets by the *Lexx*, technological destruction underlies major plot arcs of the TV series. Mantrid, a cyborgian scientist who becomes a host for the insect essence in Season Two, destroys the Light Zone through his drones. (“End of Universe” 36:38-37:04) Season Four takes place on modern-day Earth that is doomed to destruction through the humanity’s technological efforts in a very near future. (“Texx Lexx” 35:39-36:30) In addition to emphasising the detrimental effect of technology through the imaginations of the global-scale destruction, *Lexx* shows distrust towards the promises of immortality through technology. In “Supernova,” upon visiting the first planet Brunnen-G inhabited, the *Lexx*’s crew learns that immortality promised by technology is nothing, but a record stored on a dying planet. Thus, even though *Lexx* does not dwell on environmental issues caused by technological development per se, it showcases both the destruction made possible by technology and the failure to deliver the results on the alluring promises of technological progress.

*Killjoys* provides a more detailed picture of interconnection of technology and environment, being set in the Quad, where all habitable moons are terraformed by the Company, a technological corporation, which presents a considerable political power. The Company, its policies, and activities accentuate the connection between technology and the mechanisms of oppression, subjugating both human and nonhuman actors. Possessing the

technological expertise and power, the Company actively engages into biopolitics. It regulates population of both the only inhabitable planet of the system – Qresh – and terraformed moons by imposing limitation on its workers and goes as far as to dictate the limit of technological body modification, which defines personhood. Under the Company’s law it is illegal to modify more than twenty-six percent of the human body, and a human with higher modification index is not considered a “person” and is banished from the territories owned and controlled by the Company. (“Dutch and the Real Girl” 36:22) The limits introduced by the company on technological body modifications constitute an additional parameter of the body politics, marginalising a group of people and divesting them of their rights, simultaneously making a statement on the hierarchical dominance of the unmodified human over both the human-machine hybrid and the technological other. The Company concentrates its production facilities on Westerley, the terraformed moon, owned by the Company, and Lucy’s home port, and makes sure the workers are bound to Westerley and cannot move to other parts of the system, which experience less of the deterioration caused by industry. Exposing the link between the environment, technology, and social process, *Killjoys* explores the issue of responsibility and systemic injustice exercised towards both human and nonhuman agents.

Similarly to *Killjoys*, *Aurora* explores the interconnection between society, technology, and environmental impact, condemning the neglect towards the planet by drawing the direct comparison between Earth and the Ship. The Ship’s body is made vulnerable through the inability of human creators to foresee all the effects of the Ship’s journey and create a sufficiently sustainable system. Contemplating the technological progress of humanity on Earth during the journey, the Ship sees no advances “of fundamental importance,” and connects it to the limits imposed by their “fouled nest,” unable to sustain the healthy human and nonhuman populations. (377) These ruminations reveal not only concern over the consequences of the human neglect towards the environment, but also a



thought that these consequences are too complex to be resolved through human efforts. The lack of trust in humanity's ability to solve the problems it caused through the reckless exploitation of the planet's resources paints a rather pessimistic picture of the future, where technology is partly a tool of eventual destruction.

Despite the common message of the dangers inherent in technological development, the earlier works – “Specialist” and *Lexx* – emphasize war, and consequent weaponization of technology, as the main danger of technological progress, while *Killjoys* and *Aurora* emphasize the complexity of the process happening in the environment and the multifaceted impact of technology. In a way, “Specialist” and *Lexx* reduce technology to weapons, and prioritize the human over the environment, pointing out the vulnerability of human existence in the face of powerful technology, while the planet serves as a backdrop for the unfolding tragedy of humanity. In *Killjoys* and *Aurora*, the relations between technology and environment are a site of interaction of different human and nonhuman agents, a political and social process, requiring responsible participation from humans, as well as recognition of the nonhumans.

### **1.3 Hostile Machines and Mass Extinction**

Use of nuclear weapons during World War II, subsequent testing, and on-going proxy wars yield not only the images of global destruction by technology, but also images of the technological other, embodying this destruction and wreaking havoc on the human world. Analysing the impact of nuclear warfare, Braidotti notes: “The possibility of atomic overkill has transformed even our sense of death, replacing it with previously unthinkable notion of extinction, changing the perception of technology.” (*Nomadic Subjects* 49) The fear of extinction, coupled with the earlier depictions of the uncanny automaton, animates the image of the technological other hostile to its creator.<sup>102</sup> The Berserker series encapsulates this fear

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<sup>102</sup> Kang writes, tracing the origins of the uncanny element in the technological other: “In fantastic stories [of German Romantic literature] the self-moving machine no longer represented rational or mechanistic ideas but appeared as an uncanny entity of mysterious nature that unsettled and frightened people, sometimes to the point

of total extinction in the alien berserker machine which is programmed to eliminate sentient or – depending on the instalment of the series – all life.<sup>103</sup> In their wake, Berserkers leave lifeless planets, where life can never occur again. HAL's murder spree is localised and does not reach the scale of extinction, but nonetheless contributes to the development of the image of the hostile human-created machine.

As much as entertaining the idea of the good war with an alien, monstrous, and nonhuman enemy, the Berserker series is preoccupied with the reinstatement of the dominant position of the human in the face of the challenge from the uncontrollable and dangerous machine. Consequently, human technologies are habitually represented as tools: machines provide for humans' victory, but they are inessential, it is the human volition, intention, and ingenuity that wins the war. In *Brother Assassin* these relations obtain a distinct linguistic framing: an android, used for eliminating berserkers on the planets, is referred to as "slave," while a human, controlling the android remotely is called "master." (Saberhagen *Brother Assassin* 39). In *Berserker Kill*, featuring the widest variety of human technology, the boundary between the human and the machine is tested by the possibility to copy a human mind in a digital storage space, but the resulting entity is proven undeserving of the human status. Nicolas Hawksmoor, initially disguised as an AI, is a sinister entity holding the woman he loves captive in a digital, disembodied form. However, when his true origin is revealed, his actions, including the illegal use of human genetic material to grow an organic body for himself and plotting against his father, are pardoned. He chooses to escort the Builders' seedship to a safe place away from the human space, which effectively banishes him from the human society as an aberration against the established order of relations

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of madness." (187) The twentieth century has boosted the development of this aspect of the technological other's image, retaining its original connection to the early fantastic literature.

<sup>103</sup> In "Without A Thought," a berserker machine willingly engages into a peaceful game with a "semi-sapient" animal, which the protagonist uses as a ruse to hold berserkers before the reinforcements arrive. Berserkers in this version aim to annihilate only "sapient" life – humans or human-like species. However, in *Brother Assassin*, berserkers make the planet uninhabitable so that no life can develop on it, which though intended to prevent the evolution of sapience, expands the range of destruction immensely.

between the human and technology. These repeated demonstrations of the human control over technology serve as an exorcism of the technophobia invoked by the uncontrollable technology threatening to bring humanity to a tragic demise.

In contrast to the constant reassurance of humans' full control over their technology in the Berserker series, *2001* accentuates the situation of the loss of control in conditions that make humans exceptionally vulnerable, which refocuses attention on showing the human superiority over the machine. HAL's arrogance is based on his perception of his performance as flawless, logical, and infallible, however, his straightforward thinking cannot rival curiosity, a sense of wonder, and risk-taking behaviours, pertaining to humans. Peter E.S. Babiak writes in "2001 Revisited": "By employing his creative rather than his logical, processes Bowman arrives at method of entering the airlock through use of the characteristics of the space pod and of the airlock in a manner other than which they were designed for." (66) This trend is present in other works from the period, including "Solar Plexus," the Berserker series, and *The Ship Who Sang*. In the second version of "Solar Plexus," Astrid-Bennett who lost his human essence, cannot predict the actions of his prisoners, which results in his downfall. In "Without a Thought," the first berserker short story, the human protagonist uses a semi-sapient animal to distract the berserker and to win time for reinforcements to arrive. Helva in *The Ship Who Sang* is proud of shell-people's flexibility, creativity, and feelings, bringing them closer to humans, and obliquely countering HAL's assurance of a flawless computer's superiority. (McCaffrey *The Ship Who Sang* 200) The status of technology as a product of somebody else's creative process establishes its prosthetic and auxiliary nature; regardless of how threatening the hostile technological other is, it cannot rival human risk-taking behaviour and perseverance. In these examples, the human invariably emerges victorious against the nonhuman other, reiterating the conceptual relevance of the anthropocentric paradigm.

The anthropocentric vision of liberal humanism predetermines the coordinate system of the functioning of technology, anxiously following the instances of the autonomy of the technological other, as well as other breaches of human control over technology and assuring the victorious emergence of the human out of this predicament. In some works, analysed above, this preoccupation encapsulates the interaction of the human and technology. “Solar Plexus,” the Berserker Series and *2001* testify to the human superiority over the aberrant technology, while “Specialist” and “Starcrossed” express uneasiness and concern over the influence of technology, offering ways of changing or avoiding the unnatural situation where humans find themselves stirred in a direction detrimental to them by technology. However, attitude to technology in other works in this section cannot be reduced to the anxiety and issues of control, containing elements that invite to shift the vision of technology, either to see its positive aspect or to reconsider the hierarchical relations and dichotomic oppositions, governing the perception of technology. McCaffrey’s Brainship series offers a hopeful view of technology, while *Lexx* draws attention to other types of technology that promise salvation rather than destruction. The Universe of Xuya Series and The Imperial Radch Trilogy challenge the anthropocentric paradigm, focusing on the nonhuman identities and subjectivities, while *Aurora* presents the technological other as a multi-agential entity, blurring the dichotomic boundaries. Questioning in this way both the anthropocentric vision and binary oppositions, these works benefit from an analysis guided by the posthumanist perspective.

## **2. Transhumanism**

Transhumanism, as its main theoreticians describe it, is a direct descendant of humanist philosophy, picking up the Enlightenment project and taking control of the

development of the human, using technological means.<sup>104</sup> In “The Philosophy of Transhumanism,” More writes:

“‘Trans-humanism’ emphasizes the philosophy’s roots in Enlightenment humanism. From here comes the emphasis on progress (its possibility and desirability, not its inevitability), on taking personal charge of creating better futures rather than hoping or praying for them to be brought about by supernatural forces, on reason, technology, scientific method, and human creativity rather than faith.” (4)

Transhumanism glorifies technological enhancement of the human body, taking control over the evolution of human species and delights in the opportunities that technology provides in terms of the control of nature. All these possible contributions of technology to humanity’s development accentuate its instrumental essence, subservient to the human’s higher reason, which reveals the epistemological connection between More’s vision of technology and that voiced in Heidegger’s essay. However, in contrast to Heidegger’s caution, transhumanism is mainly techno-optimistic, providing that technology remains under human control. Losing control of technology remains a concerning point for some transhumanist philosophers, which is reflected in the discussion around the AI takeover, which Bostrom describes in his *Superintelligence*.

The optimistic vision of technological development, inherent in transhumanism, make it an opportune approach to considering positive representations of technology in the sentient spaceship trope. R.L. Rutsky, film and media scholar, characterising the portrayals of technology, divides them into “utopian” and “dystopian,” and notes: “[T]o the extent that technologies are seen as tools or instruments for human use, to the extent that they seem to remain under human control, directed towards human ends, they are seen in positive, utopian terms.” (182) The optimistic vision of technologies indeed holds a utopian potential, like

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<sup>104</sup> Bostrom also points to same origin points of the movement: “Transhumanism [...] can be viewed as an outgrowth of secular humanism and the Enlightenment” (“In Defense of Posthuman Dignity” 55)

McCaffrey's brainship or the Culture in Banks's series. Technology as a tool to master nature is another side of it, apparent in Baxter's Xeelee Sequence. The organisation of this section parallels the section on liberal humanism, in the first two subsections considering the same aspect of technology, but approaching it from the transhumanist point of view, while the third section returns to the figure of the technological other whose actions threaten the integrity, freedom, and even existence of the human.

## 2.1 Human Enhancement

Improvement of the human body and faculties, an initial goal of creating a human-machine sentient spaceship, is a staple of the transhumanist thought, recurring in the works of transhumanists, including Bostrom and More. More foregrounds it as a core concept defining transhumanism in "True Transhumanism: A Reply to Don Idhe": "*Transhumanists seek the continuation and acceleration of the evolution of intelligent life beyond its currently human form and human limitations by means of science and technology, guided by life-promoting principles and values.*" (137, emphasis original) In contrast to humanist suspicion about combining the human and the machine in one body, transhumanists see it as a positive development, as long as this combination is conducive to human enhancement. McCaffrey's shell-people are an example of a transhumanist success, best exemplifying her trust in the potential of technology to solve any political, social, or environmental crisis. McCaffrey equally trusts the ability of humans to control technology and lays full responsibility for the adverse effect of technology on the users, abusing technological power.

The transhumanist promise of transcending the human body limits through technological enhancement fully blossoms *The Ship Who Sang* and related stories; the technological body given to people with disabilities is a key to both professional opportunities, and abilities unimaginable to an ordinary human. Helva is invariably positive towards her embodiment in the novel and the short stories: neither an alien embodiment, nor a synthetic body tempts her to change her physicality, her own human-mechanical body

remaining her firm preference: “I’ve just *been* in another body, I find I prefer myself.” (McCaffrey *The Ship Who Sang* 168, emphasis original) Helva’s enhanced body is a source of technological solutions to several life-threatening emergencies. On a planet suffering from a plague, Helva notices “a twitch of eyelids and a motion of nostrils” through her cameras, indicating that a patient’s brain might be unaffected by paralysis, proving the applicability of Theoda’s theory and treatment course. (McCaffrey 34) On the mission with Kira, Helva uses her unique singing voice to destroy the death cult on the planet. Applying her voice as weapon once again, she conquers drug runners and frees herself and four other shell-people and their partners from captivity. Helva’s body, despite its limitations, which are discussed in Chapter One, is a source of delight and professional growth, a work in progress, upon which Helva improves throughout her life, installing the fastest available drive and cloaking technology, using all available upgrades, except for the prosthetic body, thus embodying the definition of transhumanism.

The Brainship series shows technological progress as ultimately a good thing and placing the responsibility for the negative consequences of technology on the person wielding it. SF critics note that post-apocalyptic settings caused by high-technology warfare of the future, and various technological catastrophes, threatening the existence of humanity, abound in the 1960s cultural production.<sup>105</sup> Scenarios of natural disasters, unknown epidemics and radioactive poisoning bringing populations of whole planets to the brink of extinction are indeed present in *The Ship Who Sang*, fitting the pattern, but only the last can be unambiguously described as a technogenic crisis, while the first two beckon rather towards the fickle character of nature rather than technology. And to alleviate this precarity, McCaffrey offers technology as a tool both used in the wake of cosmic pandemics, natural disasters and radically improving the individual’s well-being. However, in the wrong hands,

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<sup>105</sup> See Malisa Kurtz’s “After the War, 1945-65,” Kim Newman’s “Mutants and Monsters,” and David J. Skal’s “A-Bombs, B-Pictures, and C-Cups.”

technology can have a disastrous impact on a planetary level. For instance, a rogue scout spaceship, maddened by her partner's death and trapped in lava, organises a death cult on a planet. Likewise, the drug runners' leader, using knowledge about shell-people gained from partial scout training, abducts courier ships, transporting rare drugs. Both the rogue ship and the drug runner are revealed as mentally unstable, suggesting that the negative consequences of technology use are inherently caused by people rather than technology itself. McCaffrey depicts technological other as devoid of agency, as an instrument; both through allocating the person behind the technology with responsibility, and through the contrast between shell-people, who she presents as equal to humans, and "computers," which constitute a collective image of technology, lacking ingenuity and flexibility.

## **2.2 Control Over Nature**

Human enhancement is the focus of transhumanist movement, and the way of achieving it invariably involves overcoming the limits of nature, which are associated with not only with mortality and disease, but also with "animalistic urges and emotions that sometimes prompt [humans] thoughtlessly into acts of hostility, conflict, fear, and domination," as More describes it in "The Extopian Principles. Version 3.0: A Transhumanist Declaration." (par 23) Defining "human as a transitional stage standing between [human] animal heritage and [human] posthuman future," More expresses a strictly hierarchical view of relations between the human and the nonhuman animal. (par 14) A logical continuation of it is the control not only over human nature, but over the nonhuman in nature as well, which technology offers by granting the freedom from biological heritage. In this subsection, Baxter's Xeelee Sequence is considered as a series inspired by transhumanism, both in its technology race with other species and relations with nonhuman species, that are considered more "animalistic."

The Spline, the spacefaring animal in the Xeelee Sequence, attempt to improve their species and carve a niche for themselves in the universe-wide technology race, but fail to



overcome the “animalistic” in them, remaining the nonhuman animal, conquered by the human in their colonial expansion. The series portrays the natural as vulnerable, and the cultural as preferable, though potentially dangerous, for instance, the Spline’s technologically modified bodies are painful, but are still preferable to the natural flawed body. However, technological modification does not help the Spline to challenge the animalistic in them, defining their place in the narrative. Technological changes and interventions in the Spline come at a price: they are “in constant, continual pain” due to the “clumsy adaptations.” (Baxter *Timelike Infinity* Chapter 12) The pure, unmodified state of the Spline stands for the natural, painless, healthy body, which, however, lacks a competitive advantage in the context of the interplanetary technological race. Encountering the natural in the Spline, human characters are shocked and disgusted by the moist, dark, organic reality of the animal other’s body and “miss human technology.” (Baxter *Xeelee: Vacuum Diagrams* “Blue Shift”) The abject organic suffering body of the Spline that humans intentionally ignore is a reminder of the natural processes and impending decay. Technology is seen as the only way to escape the “inexorable workings of natural processes,” for instance Xeelee’s “great projects” are aimed at allowing them to flee the “decaying cosmos,” “aged, dead, darkened universe.” (Baxter *Timelike Infinity* Chapter 16) The terrible consequences of technological race, destroying civilizations and species can be tolerated and are a little price to pay for avoiding the inevitable heat death of the universe. The elimination of natural processes of death and aging is crucial for the characters’ motivation, for instance, the main driving factor to fight against the Qax is that they prohibited the use of anti-senescence (AS) treatment by humans, the same AS-treatment is used by the Qax to buy cooperation from certain humans. The border between nature and culture is drawn by the tendency of the natural decay, and the aspiration to avoid these processes excuses even the disembodiment of a Virtual’s life. Hence, the series unquestioningly recognises the hierarchical superiority of the culture part of the nature/culture dichotomy.

The attitude to technology shaped by the Xeelee Sequence's discourse is characterised by an uneasy duality of constant threat from a more technologically developed species and fetishization of technology, but eventually distils to the victory of the human despite their initial disadvantage. Technology becomes an object of desire, trade, and conquest, with the best and most advanced technology belonging to the Xeelee, who do not pay attention to "junior" species, like humans or the Qax. The Xeelee leave their technology scattered around the universe and other alien species pick these bits and use them, gaining technological advantage over each other. (Baxter *Timelike Infinity* Chapter 16) The chase after Xeelee technology becomes a more efficient strategy of gaining the upper hand in cosmic inter-species relations, so the technological progress is reduced to a hunter-gatherer experience and obtains a shade of magic with artefacts, neither fully understood nor controlled. Through this chase after Xeelee technology, called the Assimilation, humans reach a level of technology sufficient to unleash a war on the Xeelee, but their victory in this war is predetermined by ingenuity and "staying human." (Baxter *Xeelee: Redemption* Chapter 3) This self-glorifying attitude to the human resembles the victory of human ingenuity over the technological other in "Solar Plexus," the Berserker Series, and *2001*. Thus, fuelled by the anthropocentric premise, technology in the series becomes a means, a cause, and reason for war, colonization and oppression, which can only be stopped by the humans who ultimately control technology and win over a more technologically developed species through their originality, based on a mixture of "heroic" deeds of courage, pan-species patriotism and conservative values like heteronormative patterns of family and childbirth.

### **2.3 Superintelligence and AI Takeover**

The only concern transhumanism has about technological development is AI takeover, essentially the emergence of the technological other, which not only has capacity, but also volition to use its power against its creators. Even though the scenarios of AI

takeover do not necessarily involve the subjugation of humanity, most of them argue that this kind of transcendence does not promise progress to humanity. Vernon Vinge posits in “Technological Singularity”:

If the Singularity can not be prevented or confined, just how bad could the Posthuman era be? Well... pretty bad. The physical extinction of the human race is one possibility. [...] Yet physical extinction may not be the scariest possibility. Think of the different ways we relate to animals. (356-7)

The discussion of the future of humans and posthumans is a staple of transhumanist rhetoric, and the conclusions they tend to come to are threatening for humans. For instance, Bostrom starts *Superintelligence* with a parable of sparrows and an owl, implying that humans will be unable to comprehend, let alone control or contain the emerging superintelligence. This direction of thought is strikingly different from humanist techno-anxiety that is quelled by the reassurance of the human superiority that can be observed in “Solar Plexus,” the Berserker series, *2001* and McCaffrey and Lackey’s novel. All of them use the technological other as a reference point to prove the superiority of humans, while transhumanists argue convincingly for consideration of the serious threat a superintelligent AI might pose.

Banks’ Culture series engages with this concern directly, but, instead of reaffirming, counters it with a techno-utopia, governed by the Minds, essentially AI sentient spaceships; even though the Culture plays out the consequences of the AI takeover, the consequences of it are far from the apocalyptic scenarios transhumanist critics generally envision. The Culture is a magnificent world-building exercise, where, as Farah Mendlesohn contends, Banks “disposed of the box” of the “social and economic mores of the contemporary world,” challenging the inevitability of capitalism. (556) Due to the Minds’ forecasting excellence, wise governance and technological capacity, the Culture’s post scarcity economy does not need trade or human labour, so the organic citizens of the Culture enjoy a centuries-long lifespan, high-quality healthcare, and access to travelling, games, art, and entertainment.

Despite countering the main concern of the AI takeover, Banks's utopia does feature traces of associated anxiety, including the lack of transparency and comprehensibility in the superintelligent AI, and the reduction of the human status to wards of a higher power. The Minds' independent evolution and technological progress make the mechanisms of their functioning obscure for humans. The processes running in the Minds and providing for their superintelligence become mystified, and their existence as four-dimensional entities further divides Minds from three-dimensional humans and shapes them as Demiurge-like entities. Describing this divide, Banks notes that humans have "a status somewhere between passengers, pets and parasites" in the Culture in "A Few Notes on the Culture" (1994). This cushioned existence, however, gives very little political power to humans. The Minds' consultation with their human passengers or residents is more of a courtesy towards other sentient species rather an essential procedure, which the Minds skip when a rapid decision is needed. For instance, in *Excession*, encountering the "Outside Context Problem," Minds do not inform humans immediately. Instead, they arrange the observation of the excession, and call for a committee of Minds to define their course of action, without informing most of their population. (Banks 61, 105) The exclusion from the political process, lack of transparency and constant observation of the Culture's humanoid citizens corresponds to the concerns cited in connection with the contemporary development of AI technologies, providing ground for the transhumanist vision.

Though resisting anxieties connected with superintelligent AIs, the Culture series retains the transhumanist orientation both in the way it treats the human body, and the place it allocates to the Minds. Technological progress in the Culture allows the citizens an unimaginable freedom of choice in terms of their body, including gender switching, enhancing themselves with hormones, and abandoning human form altogether. The Minds are superintelligences that still follow the pattern of transcendence of the human capacity, which both Bostrom and Vinge envision as a prospect of humanity. Essentially, the Culture

retains the hierarchical system of views, pertaining to transhumanism, even though humans cease to take the top position in it. And even among Minds hierarchical distinctions remain. The example of handling the excession shows that a status of the Mind is determined by its age, and its affiliation to the normative Culture political views, which resembles the patterns of discrimination based on race, gender, class, and disability, reawakening the hierarchical systems of contemporary world.

The visions of technology as a tool capable of mastering human and – implicitly – nonhuman nature in transhumanism prevails over the anxiety persistent in the liberal humanist thought, however, it still retains the distrust towards technology that transcends human understanding, has agency, and displaces the human from the top of the hierarchy. The trends similar or corresponding to transhumanist thought shape the attitude to technology in some instances of the sentient spaceship trope, revealing a diversity of approaches taken to imagining a posthuman entity. The intervention of technology into the human body is welcomed in the instalments of the Brainship series, written by McCaffrey alone. Helva is posthuman entity, whose existence is premised on overcoming the limitations of the flesh, and who engages with the cases of techno-anxiety only to disprove them, never doubting the usefulness of technological means and staunchly rejecting agency in the technological other. Technology serves as a tool of assuming control over nature in the Xeelee Sequence, even though for the Spline the technological enhancement does not result in retaining their freedom. The Spline's association with the nonhuman animal renders it as a part of the animalistic nature that should be controlled by humans. Humans eventually win the technology race, even though they do so not by merit of their technological advancement, but by their unique humanness, reiterating the anthropocentric paradigm. The Culture series diverges from the anthropocentric hierarchy, letting the Minds, superintelligent sentient spaceships, take over humanity, but retains the hierarchical organisation. At the same time, the Minds developed by a humanoid species fit the transhumanist description of posthuman

stage, with the AI replacing the human at the top. The anthropocentric paradigm guiding both liberal humanism and transhumanism is limited by seeing technology as a tool, and leaves little room for the agential potential of technology, creating a polarized view of technology, where techno-optimism is associated with pliant, controllable technology, while the independence of the technological other is a source of eschatological fear.

### **3. Posthumanism**

The complexity of the posthumanist paradigm, challenging hierarchical presumptions and scrutinizing the intricate entanglements of the human, technology, and the nonhuman environment in their interconnected development, aims to overcome the limitations of the transhumanist and liberal humanist view of technology. Characterising the reaction to contemporary development in science and technology in “Afterword: Complexity, Materialism, and Difference” (2012), Braidotti notes: “The contemporary social imaginary in relation to these changes swings between euphoric techno-transcendentalism and paranoid technophobia.” (171) In contrast to these two disparate views, Melvin Kranzberg in “Technology and History: Kranzberg’s Laws” formulates his first law as: “Technology is neither good nor bad; nor it is neutral.” (545) The recognition of the ethical and social essence of technology in Kranzberg’s laws situates technology in the socio-historical environment, prompting the vision of technology as emerging from it and imbued with meaning through it. It gives more space for seeing technology as an agential power, existing within an interconnected network of human and nonhuman agents.

The posthumanist perspective provides theoretical insights into the inherent technological hybridity of the sentient spaceship, into the nature-culture continuum where this hybridity and monstrosity blossoms, and the challenges to the anthropocentric paradigm that it offers. The section is subdivided into two subsections, the first one considering human-machine hybrids and the alien technological other and exploring their subjectivity through their contacts with the human, the second dwelling on the representation of technology as a

part of nature-culture continuum, through various contacts of the human, the technological other, and the environment. The first subsection analyses the challenge to traditional subjectivities in McCaffrey's Brainship Series, de Bodard's Universe of Xuya series, Leckie's Imperial Radch Trilogy and Dunstall's Linesman series. Biotechnology, and the hybridity arising from its application in "Specialist," *Farscape*, Bear and Monette's "Boojum," and Okorafor's Binti novella series are considered in the second section. The second section also touches upon the relation of nature and culture in the Ship in *Aurora* and the Universe of Xuya's mindships, where sentient spaceships are either affected by natural forces, thus being included into the nature-culture continuum, like the Ship, or tap into nature as an inspiration for their design and construction principles, as mindships.

### **3.1 The Posthuman Subjectivity and Agency**

Braidotti posits that posthuman subjectivity grounded in the "enfleshed and extended, relational self" balances out the opposites of transhumanist view of technology, relying on immanent qualities of different embodiments, writing: "The emphasis on immanence allows us to respect the bond of mutual dependence between bodies and technological others, while avoiding the contempt for the flesh and the trans-humanist fantasy of escape from the finite materiality of the enfleshed self." (*The Posthuman* 90-91)

The exploration of the relations between the human and the technological other is reflected in SF, through depicting the technological other as an independent agent, incorporated in human society. The Brainship series, the Universe of Xuya series and the Imperial Radch Trilogy explore the alternative subjectivities arising in the cyborgian connection of the human body/mind and the technological other, choosing posthuman protagonists. The Linesman series explores the alien subjectivity of the lines through the process of the gradual recognition of their sentience by humans.

Though the techno-optimistic strand in the Brainship series has detectable parallels with transhumanist premises, *The Ship Who Sang* is often mentioned in works associated

with posthumanism, both capturing Haraway's attention in "A Manifesto for Cyborgs" and figuring in "Chronology I: The Posthuman" in *The Cambridge Companion to Literature and the Posthuman*. (Clarke xxvii). Haraway praises the novel for imagining the cyborg whose engagement into profession and skill is not limited by the female embodiment. (*Reader* 36) Following Harawayan analysis of the cyborg in "The Cyborg, its Manifesto and their Relevance Today: Some Reflections," Zoë Sofoulis ruminates on the attraction of the cyborg metaphor, writing:

For a creature that is supposedly outside of salvation history, it is ironic [...] how often the cyborg is regarded as a salvific figure. As Haraway hoped, the cyborg, with its euphorics of impurity and the non-innocent pleasures of the interface, has indeed rescued us from many of those nasty old enlightenment dualisms and dichotomies.

(10)

Helva's body does indeed reveal the porosity of several dichotomic boundaries, uniting the organic and inorganic, the born and manufactured, the human and nonhuman, flesh and metal, nature and culture, constantly reminding us of the materiality of the body. Even though in many critical accounts, McCaffrey is not bold enough with breaking with social stereotypes, Helva is a literal saviour in many of the stories, bringing the cyborg metaphor into a literal sense of plot development, hinting at the possibility of posthumanist entanglements, even in a mainly transhumanist narrative.

The Universe of Xuya series, embracing distinctly different cultural spaces, gives accounts of different social attitudes and relations, translating into the position of and attitude to the nonhuman entity of the mindship. In the Universe of Xuya, mindships are born and made in three space empires: Mexica, Xuya, and Dai Viet – each of them forming their own approach to mindships and their birth. The military-oriented Mexican Empire makes bearing a mind a duty, presenting it as honour, despite the obvious danger for the woman, however, their design approach, leaning towards standardized ship hulls, and politics of separating



mindships from their mothers, erases the individuality of mindships, casting them as expendable and resulting in mindships' shorter lifespan: "[T]heir Minds slowly went insane from repeated journeys into deep planes." (De Bodard "Shipmaker") Xuyan and Dai Viet mindships have "a proper anchor, a properly aligned ship," a result of a careful planning and design accounting for the "humours of water and wood" and their unobstructed flow throughout the ship. (Shipmaker) Nevertheless, Xuya sees mindships as nonhuman, a piece of technology, a product rather than a living being; they are pointedly not a part of the family and are referred to as "it," though birthing a mind is rewarded financially and opens a way to improving social standing. In contrast, Dai Viet integrates mindships into social structures, they are brought up by their human families, erasing the boundaries between species, and giving mindships rights to walk different paths in life and take different social roles like humans. Opposing all three viewpoints, the Western galactic political entity, which does not produce mindships, believes that minds are "abominations" and "monstrosities", outraged by the infringement of the human/machine boundary. In "The Waiting Stars," Galactics capture mindships and try to remedy the wrongs of their birth by erasing their memories, giving them human bodies, and prohibiting them from going to space, which results in suicidal tendencies in most of the mindships. "The Waiting Stars" highlights the transhumanist idea of replaceability of the body in the Western-based culture, reiterating the body/mind dichotomy, which clashes with the uncompromising materiality of mindships, who cannot survive in the bodies that are not theirs.

With Breq as an ethical centre of the trilogy on the one hand and an utterly atrocious process of creating ancillaries on the other, the novel embraces an ambivalent and complicated representation of technology. The Radch uses its superior technological potential to carry out a millennia-long colonization project pumping resources out of newly conquered planets and assimilating their religion in a such way that eventually populations adopt the Radchaai lifestyle, customs, and etiquette. The Radch empire's expansion is also

sustained by the ancillary-making process, intrinsically unethical both in its purpose and effect, leaving no traces of the original human's personality creating obedient weapons to be used in the unfolding colonization and slaves to serve the Radchaai citizens: "[T]hey would either be stored for future use as ancillaries – like the ancillaries of mine that stood before them now, identities gone, bodies appendages to a Radchaai warship – or else they would be disposed of." (Leckie *Justice* 67) Though ancillaries, empty husks, devoid of former personality, are implanted with a spaceship's AI and directly controlled by it, which invokes the image of technology destroying human individuality, AI spaceships themselves are enslaved by "an overwhelming reason to *want* to obey" to their creators. (Leckie *Justice* 339, emphasis original) Their lack of agency is evident in the ancillary-connection process; they do not have a voice in being connected to certain bodies. For instance, One Esk gets a body with an unpleasant voice, making singing, its hobby, unpleasant to listeners. Both the human and the technological other are objectified by the technological means arising out of the unjust and oppressive system of the Radch colonization, foregrounding the social aspect of technology and showing how systemic violence creates utterly unethical technologies, regardless of who uses them, countering the idea of the full responsibility of the user in the Brainships series.

The initial position of the AI in the Radch is an object, belonging to the Lord of the Radch, which clearly indicates the hierarchical relations between humans and the technological others, however, though treated as objects, the technological others of the novels – AI ships and stations – have pronounced personalities, agency, preferences, and moral standing. Being individuals, they neither aspire for power, nor intend to destroy humanity, contrary to the transhumanist ideas of superintelligent AIs. Some of them, like *Justice of Toren*, Omaugh Palace Station, and Athoek Station value highly human life and dignity, and act upon their values. Even following orders, they can express their attitudes, for instance, a spiritual leader of a newly colonized planet compares the behaviour of human

troops and ancillary soldiers of *Justice of Toren* towards the colonized population, saying: “One Esk will shoot me if you order it. Without hesitation. But One Esk would never beat me or humiliate me, or rape me, for no purpose but to show its power over me, or to satisfy some sick amusement.” (18) Likewise, Omaugh Palace Station blames Breq for the disruption of normal life, destruction, and death of people, and makes her leave at the end of *Ancillary Justice*, essentially forcing Breq’s to become *Mercy of Kalr’s* captain. Breq’s rebellion does not focus on gaining power or even freedom from the limitations of the position of an object in the Radch society: it is as a quest of re-establishing justice. Eventually, her actions not only protect the vulnerable but also open the possibility of acknowledging AI ships and stations as a separate sentient race by the Presger. From this perspective, the technological other is represented as possessing agency equal to a human one and capable of actions tipping the balance of power in a gigantic space empire. This inherent duality of technology, with an account of the tragic consequences of its implementation and its development into independent agents, reveals an approach without the pitfalls of either extreme techno-optimism or techno-anxiety.

The interaction with alien technology in the Linesman series is characterized by two interconnected processes: the reduction of the technophobic trends connected with incomprehensibility of alien technology and the exploration of the sentience of the lines, and consequent development of cooperative relations between the lines and humans. In the beginning of the series, the lines are an alien technology that is widely used, but not fully understood, and, thus, harbours dangerous consequences. Lineships’ collisions with other ships or asteroids when resurfacing from the void cause a cosmic-scale explosion, which can be prevented only through clearing the emergence points, which in their turn become a political leverage. Lineships can go crazy, resurfacing from the void and carrying all their crew in deep stasis that cannot be reverted. Alien lineships, mysteriously arriving to the human space with their crew in the irreversible stasis and containing an arsenal of unknown

and lethal weapons, attacking human ships trying to approach them, add to the image of incomprehensible and potentially destructive technology. The danger of the alien weapons is aggravated by the readiness of all the political powers vying for the control of these ships to deploy them without comprehending their potential. All these factors contribute to the starting point of cautiousness towards the lines, and the aspiration to control them as an instrument without trying to understand them.

However, questioning this technophobic and instrumental attitude constitutes one of the main plotlines in the *Linesman* series through the gradual exploration of the sentience of the lines and the urge for a cooperative approach to interacting with the technological other. Ean's singing to the lines, listening to them, and adhering to their preferences challenges the discourse of pushing, forcing, and exploiting the lines predominant in the human society. (Dunstall *Linesman* Chapter 1) His way of "working with" the lines uncovers the functionality of the unknown lines and clarifies the existing notions, reducing the technophobic trends through obtaining more information about the alien technology, but also promoting a mutually-beneficial dialogue with the technological other. The modus operandi of the lines is cooperation, happening on many levels: between each other on a lineship, within the fleet and with their "human lines." The lines are communal and prefer to be around sentient beings who can communicate with them, and through communication both human and lines enter a process of coevolution, changing their minds and bodies. The lines affect humans' bodies and perceptions as discussed in Chapter Three, and the lines become stronger when humans communicate with them and learn how to interact with them so that they do not damage humans' fragile bodies. (Dunstall *Confluence* Chapter 22) The cooperative approach when consciously exercised by humans transforms the interaction between the lines and humans, portraying the former as agential participants, and enhance the safety of this interaction through providing more information on the technological other.

Seeing the relations of the human and the machine as symbiotic situates them as a part of a nature-culture continuum, where all boundaries are porous and blurred. The human-machine sentient spaceship from this perspective becomes a complex entanglement of matter and agency, where it is difficult to define one hegemonic agent, undermining the traditional hierarchies. The Brainship blurs the boundaries between the human and the nonhuman, but it retains the hierarchical premise. The human-machine sentient spaceships in the Universe of Xuya Series and the Imperial Radch Trilogy pose a significant challenge to the dichotomic boundary between nature and the culture and traditional anthropocentric hierarchies. The human's superiority in the Universe of Xuya is questioned by integrating mindships in human society, presenting it as a multispecies community where social position is not defined by their species belonging. The challenge to the hierarchy in the Imperial Radch Trilogy comes from the rebellion of the technological other, which is supported in the culmination by a species different than human, which does not see the world from an anthropocentric perspective. The Linesman series explores the cooperation and dialogue with the other, blurring the boundaries between the organic and inorganic bodies as a means to remedy the negative effects of technology, at the same time recognizing the agency of the technological other.

### **3.2 Nature-Culture Continuum**

The instances of the sentient spaceship trope throughout its development contained elements that do not strictly fit into either technophobia or techno-optimism and offer the platform of both discussing the essence of technology and its effects from the posthumanist perspective, attempting to negotiate a more nuanced way of seeing technology. Posthumanism invites an expanded vision of technology, setting it as a part of the environment, the entwinement of multiple agencies and implications, and demolishing the dichotomic boundary between the nature and culture. Ferrando writes: “[T]echnology should be rethought not in separation from the environment. [...] In the cycle of material existence,

technological objects come from the Earth – for instance, in their embodiments made of mineral and metals, among other materials – and, once disposed of, will go back to it.” (*Philosophical Posthumanism* 118) The sentient spaceship’s materiality draws upon many sources, encompassing both living and non-living matter, which allows the sentient spaceship to be enmeshed not only with different ontologies, but also reveal the aspects of technology that do not necessarily arise out of the human lore or intention. The sentient spaceship renders technology as a method of connecting and achieving results, used by different agents, including nonhuman ones, showing how the complexity of spaceflight can be achieved by a nonhuman animal or the technological other.

The condemnation of the “unnatural” mechanical technology in “Specialist” is balanced by offering an organic alternative of a non-hierarchical entity where diverse species cooperate peacefully and willingly. The network method of the bodily connections between different species is non-hierarchical, which is supported by the egalitarian approach to the decision-making through a communal vote. For instance, when the spaceship loses the pusher, Thinker, an equivalent of a brain, only offers options, while the crew is responsible for voting and defining the outcome. The cooperative approach in creating an entity capable of the technologically complex process of spacefaring shifts not only the definition of what technology is, but also resists hailing the human as a dominant part of this process. The human ceases to be the part that guarantees intentionality, the reason behind the machine, while starting the process of “becoming-machine”, which allows humans “to rethink our bodies as part of a nature-culture continuum in their in-depth structures.” (Braidotti *Posthuman* 92) The organic sentient spaceship both offers a conceptual alternative for mechanical technology and affirms the cyclical materiality of technology in the environment. This can be seen when the previous pusher’s dead body is fed to “Engine” and is turned into energy powering the spaceflight, merging the process of feeding and fuelling. The merging both collapses the boundaries between biological and technological process,

and touches upon the issue of recycling and reusing of the matter in the environment, a contrast to the wasteful production processes of mechanical technology. (73) The human body participates in a trophic chain and a technological process, accentuating its function as a “part of the material substances and flows of the world,” echoing Alaimo’s description of trans-corporeality. (“New Materialisms” 182) The alien organic spaceship, uniting organic actors through a specific technique to achieve a common goal through their composite material body, is both a trans-corporeal entity where material bodies come through the full cycle of their materiality and a complex non-hierarchical process, challenging the conceptual framing of what technology is.

*Farscape* recognizes the inherent ambiguity of technology and its dependence on the social and political context, condemning the destructive potential of aggressive and exploitative implementation of technology and showing the potential of technology as a multiagential process. The whole crew’s lives are disrupted by John’s knowledge of the wormhole technology, targeted by various groups competing for power. The pursuit itself, as well as the experimentation with the technology and its implementation is the cause of many deaths of sentient species. For Moya, technology first becomes a tool of enslavement, with the Peacekeepers’ experiments and collar preventing her from starbursting – moving to huge space distances in one second, – and then a means of protection when the crew steals the protective screen from an abandoned Peacekeepers’ carrier and installs it on her. (“PK Tech Girl” 27:31-27:43) At the same time, Leviathans themselves are a product of technological process, a hybrid combining the organic and mechanical, whose design hinges on the intention of the creator, as much as on their own sentience and actions. Their creation treads on the border between science and magic, recognizing their technogenic origin, but also stating that the Builders gave Leviathans a “soul.” The Leviathans become a borderline being – a result of an experiment and a gods’ creature, performing the rituals of birth and burial, like choosing the name for Talyn and bringing him to the sacred burial place after his

sacrifice. (“Dog With Two Bones” 08:27-08:44) When eventually, John’s demonstration of the wormhole technology brings home the understanding that the war between the empires must be ended, the peace treaty between the Peacekeepers and Scarrans is auspiciously signed on Moya in *Peacekeeper Wars*. Moya, an organic-technological hybrid, non-violent and spiritual by design, makes an appropriate messenger of peace, in contrast to the aggressive and totalitarian empire of the Peacekeepers, and their exploitative and violent ways of using technology to reach their goals.

Similarly to “Specialist,” Bear and Monette’s “Boojum” contrasts the exploitative and violent mechanical technology, associated with humans, and a biological process of cooperation of different species, achieving a complex technological result; in contrast to Sheckley’s human-like species, participating in cooperation, Bear and Monette focus on the nonhuman agents reaching the technological goal of spaceflight through symbiosis. Human technology functions in the story in the form of the governor module, installed on Vinnie’s body, which limits her movement, inhibiting her evolutionary progression to the “Big Empty,” and causes her suffering and pain. (Bear and Monette 14) The concerted efforts of symbionts inhabiting the boojum present the nonhuman technology, like boojums’ “symbiotic algae” producing air and water for both the crew and the spaceship itself. (Bear and Monette 3) This technology does not arise from the human scientific knowledge, it is derived from skills, processes and adaptations occurring in living organisms. In a boojum, the production of air and water is a result of symbiosis with algae. Vinnie gets her nutrients both from her prey, and from all the excretions, fluids, and other by-products of human life. These results are obtained through an evolutionary process rather than a coercive shaping of unwilling subjects into instruments for the human benefit. Likewise, eating of a human resulting in a merger is an instance of the symbiotic process, a new relation that all participants explore together, entering it on their own free will and recognising each other’s agencies.



Technology in de Bodard's Universe of Xuya is inseparable from the bigger cosmos of matter; it is a continuation of nature, imitating its forms, not a different ontology, but just one of the countless facets. The design of mechanical bodies of mindships in Xuya and Dai Viet follows traditional principles of harmony of elements, and each element is represented in or near the heartroom – the centre of a mindship. This inclusion of mindships into the nature-culture continuum starts from the design of the mechanical body, not from the connection of the partially human part, metaphorically animating the matter. With the parts of old ships recycled to use for construction of a new ship, the series invites a deeply environmental sense into the human-machine merging. (De Bodard, "Shipmaker") Even though set in highly technologized environments of space stations, habitats, and mindships, natural references frame the narrative, with the names of the ships referring to the natural world, and artistic representations of nature popping up in the characters' surroundings, clothing, pieces of art, creating a sense of natural presence and continuity.

In *Aurora*, Robinson explores the environmental view of technology, making his Ship go through of the natural processes of decay, which parallels the decay of the planet; with the Ship's self-awareness and cognisance of the processes happening to them and going through the analysis of humanity as their creators, technology in *Aurora* is agential, sentient, and radically material both in its emergence and its lifespan. He describes the starship as a complex interconnected system, where the well-being of one part depends on the well-being of others through a network of symbiotic and parasitic relations. These relations are shown as a part of one process, and the shift in them is a mere change in vectors, showing how something essential for survival in an unbalanced system designed by the humans can cause harm: "Life is a part of the necessary matrix of life, so the ship had to be alive, and so the ship was getting eaten. Which meant that in some respects, the ship was sick." (Robinson 276) The body of the technological other, interconnected with all its human and nonhuman inhabitants, is a radically material substrate for the emerging sentience of the spaceship, as

well as the site of manifestation of the nature-culture continuum. The Ship, the technological other, does not divide themselves from the environment, contemplating the outcome of the journey as the result of human actions and their negligence that equally applies to humans' attitude to technology and the environment.

The Binti Series portrays technology as an engineering skill, a symbiotic interaction of different species by presenting them as participants of a communicative process, a negotiation, both rejecting hierarchies and bridging nature/culture divide. Binti, as a Himba girl, sees technology is a non-violent process of negotiation and cooperation with natural forces, a logical continuation of nature, not an imposition of human agency on the environment triggering decay and natural disasters. The manufacturing process entails “communicat[ing] with the spirit flow and convinc[ing] them to become one current.” (Okorafor *Binti* 16).<sup>106</sup> The recognition of the agential in matter by “communicating with it” makes the Himba in general and Binti in particular, “full partners,” with technology, as Haraway describes in *When Species Meet*. (249) Technology as an active partner in the production process blurs the boundaries of the natural and the artificial and becomes a part of the interconnected network of interdependent agents, processes, and the environment. This non-hierarchical vision of technology is reflected in the connection that Binti forms with New Fish. Her resurrection is predicated on her ability and readiness to communicate with Third Fish, as well as negotiate their relations with New Fish in their coupling without assuming the primacy of human desires and needs.

The variety of materials and ontologies that are intertwined in the sentient spaceship facilitate the inquiry into the stability of the nature-culture boundary, providing numerous

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<sup>106</sup> This process in the series is explained through harmonisation, a skill, and process which Binti is gifted at. Harmonization is first introduced in the novella series as a hereditary trade and gift in Binti's family, integral for producing intricate devices that are in high demand both among the Himba and the Khoush. The concept of harmonization in Binti Series is discussed in more details in my article “Master harmonizers”: Making Connections in the Post-Disaster World of Nnedi Okorafor's Binti Novella Series, published in *SFRA Review*, vol. 51, no 3, July 2021.

examples of blurring the boundaries between the natural and the artificial. The bodies of spacefaring animals, like the alien spaceship in “Specialist,” Moya, Vinnie, and Third Fish present technology as a natural process, a biological interaction, often simultaneously condemning human mechanical technology and its philosophical underpinnings. *Aurora* and the Universe of Xuya accentuate the perpetual presence of natural forces in the technological other, not only as external force influencing them, but as an inherent structural element, defining their sentience and subjective experience.

### **Conclusion**

Due to the limitations of space in this dissertation, the Chapter engages only with certain trends in each philosophical approach, focusing on technophobia in liberal humanism, relegating techno-optimism to transhumanist analysis. It also consciously focuses only on those trends in attitude to technology that are directly connected with the sentient spaceships or influence its place in the narrative, acknowledging that larger works tend to have a much more complicated outlook of technology reflected in other characters. The Chapter, nevertheless, attempts to cover the reflection of the most significant trends in the philosophical discussion of technology and their reflection in the sentient spaceship trope. Starting from the earliest examples, aligning with the liberal humanist trends in portraying technology, the Chapter covers the transformation of the humanist ideals in the transhumanist thought, and finishes with different approaches that posthumanist scholars take to rectify the reductive technophobia and techno-optimism. Picking up the strands of analysis of the previous chapters, this Chapter engages all the works analysed in the dissertation and summarises the attitude to technology in all of them.

All trends prove to be present throughout the long timeline of the works in the dissertation and do not hinge on the combination of the sentient spaceship, however, time of publishing remains crucial for the intensity of a specific vision of technology in the analysed works. Though the trends pertaining to different philosophical approaches can be observed

in one series, to which the Brainships series testifies with its transforming attitude to technology, it is a general trend that earlier works contain more dominant strands of liberal humanist vision, while transhumanist and posthumanist trends have more representation in later works. Works published in the 2010s witness more influence of posthumanist ideas, contemplating the relations of the human and technology, and exploring the nature-culture continuum through the sentient spaceship, combining the elements of the human, the nonhuman animal and the technological other, of which the Universe of Xuya, *Farscape*, the Imperial Radch Trilogy and the Binti novella series are bright examples. Analysis of attitudes to technology represented in the sentient spaceship trope, which inadvertently touches upon the exploitative, extractive, and ethical issues of technology, and its implementation and refocuses on the hierarchies, defining the relations between the human and the other, thus paving the way for the next chapter, which focuses on the ethical issues raised by sentient spaceships' images in the analysed works.

## Chapter Five: Ethics and the Sentient Spaceship

As an interplanetary/intergalactic transport, the sentient spaceship engages in complex relations with various other species, including humans, where the mechanisms of exploitation and extraction are always at work. The versatility of materials that the sentient spaceship's body can consist of, including human, nonhuman animal, mechanical and alien components, allows the trope to venture into the exploration of relations between different groups of humans, it contemplates the relations between the human and the technological other, the human and other species, and the human and non-living matter. These variegated interactions actualise a wide spectrum of ethical issues, connected with the other's sentience and agency, as well as with questioning the exploitative and extractive practices applied to the other. The contemplation of the agential potential of the nonhuman in the sentient spaceship puts the correlation between sentience, agency, and humanness under scrutiny. It highlights the hierarchical presumptions that underlie the attitudes humans develop towards nonhumans, and the violence and oppression arising out of these attitudes. Exploring these ethical issues, the sentient spaceship poses a challenge to traditional dichotomies, and boundary-making, restrictive, and exploitative practices accompanying the human contact with the nonhuman. This challenge opens a perspective for imagining a different way for a human to interact with the world, countering anthropocentrism and rather than asking what it means to be a human, it prompts an inquiry on how to be a human in a technologically augmented world, inhabited by numerous nonhumans.

Like Chapter Four, this chapter brings together all the works analysed in the dissertation and focuses on the ethical issues that are either specifically posed by the authors or arise in connection with the representation of future societies, creating an overview and amalgamation of all previous chapters. This chapter's ethical perspective makes visible connections between all the considered works and exposes parallels in treatment of otherness that shape the contours of the trope. The chapter contains two sections. The first section

discusses the concepts of humanness and sentience, focusing on their relation to agency and the boundary-making practices that delineate exclusions and construct hierarchies. The second part analyses the relations of care and control embedded in hierarchical systems, practices of exploitation and extraction of the sentient spaceship, arising out of hierarchical visions.

The discussion of hierarchical systems of anthropocentric thinking is framed by posthumanist and new materialist thought. For the posthumanist analysis, the chapter relies on Braidotti and Haraway. Braidotti's *The Posthuman* guides the posthumanist and post-anthropocentric analysis of ethical issues set by the trope. Haraway's concepts of kinship and companion species, which she dwells on in *Staying with the Trouble: Making Kin in the Chthulucene* and *When Species Meet* respectively, assist in seeing the ways of reimagining the place of the human in the world and the relations with the nonhuman world. New materialist perspective proceeds from Bennett's theory of vital materialism she develops in *Vibrant Matter: A Political Ecology of Things* and engages with the discussion of the human/nonhuman relations in Alaimo's *Exposed: Environmental Politics and Pleasures in Posthuman Times*.

## **1. Gradient of Agency: Humanness and Sentience**

The concepts of agency, sentience, and humanness form an interconnected field where agency becomes a gradient intensity that blooms in full colour around humanness, becomes less intense around sentience, and fades to black when either humanness or sentience are considered absent. The sentient spaceship, even when it contains a human component, fails to fully claim humanness, transgressing many lines that divide the human from the nonhuman, which predicates limitations of agency, reflected in objectification, exploitation, and disposability. The nonhuman combinations have even less claims to agency – regardless of what mechanical or organic components they include, they automatically take a lower place in the anthropocentric hierarchy, becoming objects of care and control, rather

than independent entities. Sentience is a decisive factor in further deliberation of their status in the hierarchical system and any claim for free will. The nonhuman animal component entails recognition of sentience, however, it does not preclude the implementation of exploitative and extractive practices, legitimised by anthropocentric systems. The agential potential of the nonhuman organic sentient spaceships challenges these systems and critiques the exploitative practices towards the nonhuman-animal functioning in the modern world. Anthropocentric systems see fully mechanical spaceships as non-sentient, and the recognition of sentience becomes a radical challenge to the vision of non-living matter, as inert, pliable, and devoid of agency, as a raw material, a source of profit for humanity.

### **1.1 Humanness and Agency**

Humanness is also not a homogenous and equally distributed quality, the multiple practices of exclusion and marginalisation of certain groups of people cast only one type of human as fully sentient and agential – the quintessential humanist ideal of “Man” – which becomes one of the central targets of the posthumanist critique. Braidotti, describing “Man” in *The Posthuman*, pinpoints the crucial characteristics: “he is white, European, handsome and able-bodied,” which constitute a standard of normativity, define the major parameters of humanness, and, simultaneously, reveal the lines of oppression, permeating Western society. (24) The features and characteristics that do not correspond to “Man” consequently fall out of the frame of normativity, and become an indicator of otherness, insufficiency, and pathology.

The direct intervention of the technology in the human body, breaking the boundary between the human and the nonhuman, the born and the manufactured, the flesh and the metal casts doubt on the humanness of the human-machine sentient spaceship. Blish’s “Solar Plexus”, McCaffrey’s Brainship Series, and Zebrowski’s “Starcrossed” set the question of humanness of the human-sentient spaceship hybrid. In both versions of “Solar Plexus,” Blish excludes the monstrous result of the technological modification of the human from the

category of humanness. As a terrible deformity, the hybrid is subject to elimination by the white, able-bodied man, symbolising the triumph of full humanity and sustaining the ideal of “Man.” On the contrary, McCaffrey sees shell-people – people with disabilities encapsulated into a metal body – as fully human, countering the presumption that a human modified so heavily becomes a computer. The Brainship series pushes the boundaries of the human and strives to cast difference in a positive light, countering techno-anxiety with a positive image of prosthetic technology, which highlights the utility of technology to humanity. Zebrowski approaches the question of humanness playing out the conflict between the human and the machinic in a human-derived sentient spaceship in “Starcrossed,” and while the human part emerges victorious, this victory heralds the imminent demise of the sentient space probe. “Starcrossed” shows the strength and persistence of the human but is ultimately suspicious of the viability of an attempt to combine the human and the technological. Thus, “Solar Plexus,” Brainship Series, and “Starcrossed” centre their discussion of humanness on the human/machine dichotomy, and, while disagreeing on who can be seen as human, Blish, McCaffrey with her co-authors, and Zebrowski do little to challenge the dichotomy itself. Essentially, they agree on the inherent value of the human, while seeing the machine as a derivative, secondary entity, which fails to meet the high standard of humanness in inventiveness and emotional experience.

The human/machine binary is central for the human-machine combination with its interpretations present in the majority of considered works; however, the combination engages with other diversions from the universalised humanity: the binaries of gender, race, and disability play a crucial role in the world building and plot of the discussed works. Analysing the divergence from the standard of normativity, Braidotti writes: “In so far as difference spells inferiority, it acquires both essentialist and lethal connotations for people who get branded as ‘others’ [...], who are reduced to the less than human status of disposable bodies.” (15) The sentient spaceship trope dramatizes these scenarios and shows how the



“lethal connotations” unfold in the imagined futures. McCaffrey’s Brainship Series considers the issues of disability, showing the ultimate vulnerability of people with disabilities in the face of a capitalist machine of the future society. Leckie’s Imperial Radch Trilogy and de Bodard’s Universe of Xuya series explores the racial difference and its consequences for the lives of people in the empire.

The premise of McCaffrey’s Brainship series states that only people with physical disabilities, most likely infants, undergo an operation to become a shell-person, commencing the discussion of the treatment of people with disabilities. The choice of either their embodiment or profession does not belong to people with disabilities themselves. Parents choose between the operation and euthanasia when a child with a severe physical disability is born. The choice of profession and, consequently, the configuration of their mechanical body – a spaceship, a space station, a city management unit – belongs to Central Worlds, the company financing the operation, prosthetic equipment, and training of shell-people. Far from being charitable, Central Worlds requires every shell-person to repay an enormous debt after graduating by working on missions assigned by the company. Before repaying the debt, all shell-people are in an indentured labour situation, which they neither choose nor have right to agree to, being minors. McCaffrey’s description of shell-people’s status in the future society is a bitter critique of the US healthcare system and capitalism, where disability is not only marginalised, but also monetised. In addition to capitalist underpinning, deeply immoral treatment of people with disabilities in the imagined society traces its roots to eugenics. Lisa Yaszek discusses eugenic tradition in American SF in the utopian works of the beginning of the twentieth century:

[D]ue to both their shorter national history and their greater faith in science and engineering, turn-of-the-century American [SF] authors used the utopian form to show how humans might make great strides toward the dream of unlimited perfectibility in few short centuries. (Yaszek 74)

McCaffrey's future has utopian features, including peaceful interaction of people with different racial and ethnical background and equal access to different careers regardless of sex and gender, but challenges it with the cruel underside of able-bodied distopia. She also creates a way for people with disabilities to survive the cruel selection, empowering them with a protagonist who reclaims her agency by repaying the debt and exercising her right to choose her professional engagement and modifications to her body. Putting *The Ship Who Sang* into dialogue with modern disability studies in ““She was Born a Thing”: Disability, the Cyborg and the Posthuman in Anne McCaffrey's *The Ship Who Sang*,” Ria Cheyne dwells on insufficiency of such challenge, pointing out many harmful views underlying McCaffrey's treatment of disability. However, shell-people and, specifically, Helva still represent a subversion, as their agential power to make decisions, and their capacity to inhabit a body, differing from standard and having its own limitations, challenges both objectification of people with disabilities and normativity of the body, showing difference in a positive light.

De Bodard in “The Shipbirth” and “Ship's Brother” considers disability from a different angle, unlike the Brainship series, the Universe of Xuya series touches upon a mental disability that develops in an adult after giving birth to a ship's AI mind, reversing the focus from congenital and physical conditions. Despite different circumstances and causes, as well as a different political system in Mexica, Xuya, and Dai Viet, the initial treatment of people with mental disabilities is the same as described by McCaffrey – they are euthanized. In “The Shipbirth,” the future Mexican empire has medical specialists to determine people's sanity after labour and perform euthanasia if the person is recognised as mentally incapacitated. “Ship's Brother,” a short story happening in Dai Viet, later in the Universe's timeline, contemplates both the huge physical toll on the person giving birth to a ship's mind, and other mental health consequences, in addition to a frequent occurrence of insanity. Dai Viet does not practice euthanizing people who suffer after the pregnancy with

a ship's mind, but the fear of mental disability remains overwhelming for the protagonist, who despite preserving her sanity suffers from anxiety, aggravated to almost panic attack state after seeing a person "who lost herself" in labour. (de Bodard "Ship's Brother") Both series emphasise institutionalization of the decisions on the life and death of people with disabilities; in these imagined futures, centralised governmental structures establish and impose the rules concerning people with disabilities, apparently without consulting either people with disabilities themselves or other involved parties. The described practices and decision-making process are indicative of objectification of marginalised groups and a utilitarian approach to the human body. People with disabilities are given the right to live as long as they can be used by either the capitalist mega-company or imperial machine; being useless to the power structures implies either death or discarding and excluding from societal processes by relegating the care about a person with disabilities to the family, as it is shown in "Ship's Brother." The similarities in the treatment of disability, especially mental, in the Brainship series and "The Shipbirth," the publishing of which spans over half a century, are a poignant proof of insufficient progress in the real-life political discussion of this issue.

The functioning of imperial and capitalist systems with the capacity of the sentient spaceship to become both a tool and a formidable weapon of colonization activates the discussion of the ethical issues of colonialization, with a special attention to race when the human-machine combination is involved. The human-machine combination, where the human body and technology are intertwined, becomes a site for the exploration of the interactions and interrelations of race, gender, and humanness in oppressive political systems. Leckie's Imperial Radch Trilogy explores race, gender, and technology in the imperial context, through the protagonist's body belonging to a young woman of non-Radch descent and colonized by technology replacing the original human personality with an AI mind. The Radch Empire's colonization process is not limited to conquering planets and solar systems; it colonizes the bodies of people living on these planets, not only imposing

the Radch cultural norms, but also taking a part of the population to become ancillaries. The process of ancillary making entails irreversible erasure of identities and memories of colonised people, making their personalities and histories disposable. The historical intersection of race and gender and technology exposes the practices of oppression and exploitation applied to women of colour in the labour setting. Breq, the protagonist, initially fits into this system: her body, belonging to a person who is considered “uncivilised” and consequently less human in the Radch, is objectified both by the replacement of her personality with an AI, and by her performance as a house servant for the Radch citizens. However, she breaks this pattern by directly challenging the male power of the Emperor of Radch, opposing both him personally and the expansion and exploitation practices he uses to sustain his power. Breq, a technological other in a racially marked female body, presents an ultimate subversive power, not only capable of exposing imperial biases, but also establishing an alternative non-oppressive social system.

Imperial colonization practices spreading onto the bodies within the confines of the empires themselves become an important ethical concern in de Bodard’s series, where female bodies are colonised through a dangerous impregnation with a ship’s mind. An uneasy intersection of race and class results in particularly objectifying practices of performing reproductive labour as a duty or a way to improve social standing in Mexican, Xuyan and Dai Viet societies, which attribute high significance to traditional values. In both “The Shipbirth” and “Ship’s Brother,” the Mexican empire and Dai Viet force women to give birth to ship minds to boost the empires’ military power, exposing how the female body is objectified by the power structure. “The Shipmaker,” complicates the matter, by introducing a Mexican child-bearer for a ship mind, a “foreigner” in the Xuyan empire, whose difference is immediately recognised: “a woman with brown skin, almost dark enough to be Viet herself.” (De Bodard “The Shipmaker”) Recruiting a foreigner whose social position in Xuyan traditionalist society is inherently vulnerable and offering both a financial reward and

a rise in social status accentuate the commodification of the woman of colour's body. The inherent danger of birthing a ship's mind shows how racial difference increases the vulnerability of a person who does not belong to the majoritarian group and how their health and life are under immediate threat in the context of imperial oppression. Shifting the focus from the process of expansion to the everyday processes of the empire, de Bodard emphasises the influence of prejudice and traditionalist values on the unfolding of the imperial violence and shows the persistent patterns of oppression and rejection of agential power of marginalised groups in societies that differ from the default standard of the imagined society.

## 1.2 Questioning Domestication of the Sentient<sup>107</sup>

The impact of the colonization practices covers not only human societies, but also spreads onto the natural world, with humans invading natural spaces and claiming control over them, which for the sentient spaceship trope translates into the relations of control and ownership between the human and the nonhuman organic sentient spaceship. While humans might recognize the sentience of the nonhuman organic sentient spaceship, they still do not deem the nonhuman organic sentient spaceships as equally agential, domesticating and bioengineering them. Bioengineering processes applied to the nonhuman organic sentient spaceship automatically impose human will and design over the nonhuman other, robbing them of agency, preventing them from acting independently through programming, and other available technological means. Alaimo notes in *Exposed: Environmental Politics and Pleasures in Posthuman Times* the established order of domestication “signifies both care and control,” accentuating patriarchal hierarchical structures of the human-animal relations.

(19) The nonhuman organic sentient spaceship, primarily seen by humans as a transport means and – occasionally – a weapon, becomes an equivalent of a draught animal, falling

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<sup>107</sup> This part of the chapter served as a basis for an essay in *Animals in Science Fiction*, edited by Nora Castle and Giulia Champion, published in 2024.

into the pattern of domestication, and corresponding hierarchies and functioning as an initial premise of the relations between the human and the nonhuman organic sentient spaceship.

The domestication of the self-evolved spacefaring animals reflects the gradual process of the spacefaring animals' loss of agency, evident in Baxter's Xeelee Sequence, and Bear and Monette's "Boojum." In Baxter's series, humans progressively limit the Spline's freedom of communication and negotiation with other species and finalize the process of full subjugation by controlling the breeding ground. The process accompanies and illustrates the consistent progression of the human empire, which reduces the Spline, described as a species capable of trading and contracting other species, to another example of human's dominance, and reiterates the existing utilitarian mode of human-animal relations, without challenging it. Similarly, Bear and Monette's boojums are self-evolved animals, who humans partially domesticate and control through the application of technical means. Hunting with boojums, providing them with food and care, humans at the same time limit their movement, claiming the position of dominance in a relation otherwise harbouring a potential for harmonious cooperation.

The spacefaring animals, designed by human or human-like species, give an even deeper insight into the mechanisms of stripping nonhuman others of their agential power, as the human involvement happens on a genetic, bodily level and aims to change the other for explicit human purposes. The human design often presupposes a programming – genetic or otherwise – preventing the spacefaring animals from disobeying humans and conditioning them for service, which solidifies the human's position of power and corresponding lack of agency on the part of the animal. The spacefaring animals, including Lexx, Moya, and the Miri-12 ships from the Binti novella series are subjected to this paradigm through their human design. Lexx's obedience, a feature of human programming, persists through the TV show, and is inherited by his offspring; consequently, Lexx's actions, with a rare exception, where he follows biological urges to feed or to procreate, are a result of the orders he receives

from his captains. This effectively erases his agency and cements the hierarchical structure, where Lexx is a transport and a weapon, a mere tool for human operation. Moya's design also includes a directive to serve, stipulating her position in the hierarchy of the species as lower than both her designers and passengers. Her programming also includes a prohibition on violence, echoing the main precept of the robot design, but taking it to the new level of non-violence towards any species. These limitations effectively inhibit Moya's agency and translate into her relations with other species: the Peacekeepers capture her and use her as a prison transport, experiment on her body, treating her as a tool and a raw material, inserting her into their power structure. However, Moya escapes, breaking the pattern of subjugation and re-asserting her independence and capacity for decision-making. The Miri-12 ships are also a product of laboratory design and humans piloting them or travelling on them rarely suspect that the ship can understand them and enter a meaningful conversation. Humans define the routes and schedules, creating an impression of full control over the sentient spaceships, while mostly ignoring the individual subjectivity of sentient spaceships, and squeezing them into conventional patterns. The initial premise of the human-animal relations within the sentient spaceship trope, thus, fully transfers onto the position of the sentient spaceship in a human-like community, revealing the persistence of the oppressive and speciesist principles of the human community.

The initial premise of the relations between the human and the nonhuman organic sentient spaceship reiterates the hierarchical structures of human-animal relations, however, the plot development in many cases reframes these relations through cooperative, co-evolutionary processes of inter- and intra-actions to step beyond the prescribed patterns of care and control. One of the main subversive elements is the ultimate bodily intimacy between the human and the sentient spaceship, where the nonhuman animal's body performs a function of a domestic space for passengers during spaceflights. Alaimo contemplates domestic spaces as "bounded space[s], existing to keep the outdoors, outdoors, defining the

human as that which is protected within,” which draws attention to the binary of the inside/the outside, in many ways predetermining the humans’ attitude to nonhuman animals. (*Exposed* 20) The traditional sanctuary of the domestic space is inaccessible to most domesticated animals, including the draught animals; when the human inhabits the body of the nonhuman animal, the outside/inside is reversed, something traditionally belonging to the outside becomes a domestic space, casting humans as intrinsically vulnerable, dependent on the environment provided by the spacefaring animals. This proximity and direct contact between the human body and the body of the spacefaring animal blurs the discrete idea of the human body, which becomes a body inside a body, formally in control, but also searching for a safe space in a radically alien body. These significant reversals and erasure of boundaries question the hierarchical vision, making the nonhuman organic sentient spaceship so apt for expressing an alternative vision of the human/animal relations.

The collectivity, constant exchange of matter, and numerous intra-actions characterizing the process of a spaceflight of the nonhuman organic sentient spaceship, provide a fertile ground for seeing them through the prism of kinship and companion species. In *Staying With the Trouble: Making Kin in the Chthulucene*, Haraway writes: “No species, not even our own arrogant one pretending to be good individuals in so-called modern Western scripts, acts alone; assemblages of organic species and of abiotic actors make history, the evolutionary kind and the other kinds too.” (100) Spacefaring animals, as conglomerate of species, entities combining different genetics and forming multiple symbiotic connections, and constant chemical, genetic and social exchange which involves both humans and nonhuman actors dramatize the co-evolution processes that humans have been experiencing for centuries through their interactions with domestic animals.

*Farscape*, “Boojum,” and the Binti Novella Series make the challenge to the hierarchical structures explicit, foregrounding cooperation and respect towards the nonhuman other, allocating the sentient spaceship with a distinct agency and power to



influence decision-making processes. *Farscape* states Moya's independence in the first episode: she escapes her captivity and the function of a prison ship, her breaking away from her masters stirring the main plot into motion. Even though her relations with the crew of outlaws are initially those of servitude, they shift through the co-habitation and survival quest, transforming into a respectful, and equal, kin-like connection. In her run for freedom, she breaks the tool of oppression – the Peacekeeper's collar limiting her starburst capacity; the collar is a conventional symbol of oppression, but its technological design adds another layer to reinstating Moya as agential against both exploitation and the human use of technological means to control her. In "Boojum," the cooperative nature of the human-animal relations comes to the fore, with Black Alice helping Vinnie to neutralise the governor module and receiving help in return. At the same time, the transformation of the relations between Vinnie and Black Alice presents a more radical challenge to the human agency, positioning it as less important than the nonhuman one. Saving Black Alice from being turned into a brain in the jar, Vinnie eats her, thus literally incorporating her into the entity comprising the boojum. The journey they take as a new intra-connected entity is not driven by the human; the nonhuman animal takes the lead, eliminating the hierarchies and countering anthropocentric presumptions in a threatening, almost aggressive way. Okorafor approaches the reconceptualization of the human/animal relations in a less violent, but still radical way. Her Miri-12 spaceships influence the plot, reversing Binti's death, and do it consciously, aspiring for a change in their relations with humans. The hierarchical presumption behind the relations of the human and the human-designed animal shifts, when New Fish makes a choice to save Binti, believing that their "*union would bring Miri12s forward*" (Okorafor 317, emphasis original), showing that this is an action, mutually benefiting both parties, an arrangement where two agential entities are equally important. Thus, the sentient nonhuman organic spaceship trope not only challenges the exclusion from

agentiality, and interrogates hierarchical presumptions, it also offers new ways of perceiving human-animal relations, which eliminates or reverses hierarchies.

### 1.3 The Technological Other's Agency

The hierarchical structures defining the status and position of the mechanical sentient spaceship are predicated on dichotomic oppositions of the born/the manufactured, the flesh/the metal, the organic/the inorganic, where the first element's characteristics are liveliness and capacity for sentience, which brings it closer to the human, the perceived locus of agency. Meanwhile, the second element represents a site where human creativity is applied, a blank space to be filled, a tool to be used, all of which is reflected in the patterns of relations between the human and the fully mechanical sentient spaceship. It also explains the fear and anxiety that often accompanies the representations of the technological other: the rebellion of the technological other is not only a rebellion of an essential slave; it is also a jarring testimony to the inability to control the artificial, the simulacrum, threatening to take over the original. These fears and anxieties define the dominant portrayal of the technological other in Saberhagen's Berserkers Series, HAL 9000 in Kubrick's *2001: Space Odyssey*, the AI in McCaffrey and Lackey's *The Ship Who Searched*, and their influence is visible in the *Astrid*-Bennett hybrid persona in the later version of Blish's "Solar Plexus." They predetermine the default attitude to the technological other in Leckie's Imperial Radch Trilogy, and initial perception of alien ships in Dunstall's Linesman Series, as well as the attitudes of many non-Culture civilizations to the Culture in Banks's Culture Series.

HAL, Berserkers, and the *Astrid*-Bennett represent the ultimate enemy, cruel, unrelenting, and far too easily deciphered and understood by human counterparts; their technological agencies are monstrous and arise out of "unnatural" sources, rather than naturally, like the agencies of humans. Saberhagen's series rarely sees Berserkers as anything beyond a killing machine going rogue and committing hideous crimes against life, which mostly implies humanity. In the narrative, Berserkers generally exist as a threatening

background, a function, and even though their agency is difficult to deny, it is a monstrous aberration of the natural order, which hardly subverts the existing binary oppositions and perceptions. Likewise, HAL's agency makes the same impression; it is not a challenge to the existing hierarchical order, it is its reiteration, where humanity reasserts dominance over the manufactured, the inorganic, the lacking and restores the "natural" order of subjugation. In the later version of "Solar Plexus," Blish chooses to rewrite the *Astrid-Bennett* in a way where the human part does not survive the connection with the ship, becoming a computer surrogate of his personality, revealing the anxiety of infringing the clear boundary between the born and the manufactured. The *Astrid-Bennett*, no longer human, but a monstrous hybrid, becomes another convenient enemy, a victory over whom not only saves the protagonist, but also reminds of the necessity to keep the distinctions clear. In all the above, the human victory, no matter how difficult it is, is inevitable, the villainised technological other eventually submits to the human and the "good" technology, obedient to its creator, restoring the anthropocentric hierarchy.

Even when the technological other is not hostile, it is still lacking, unable to beat the human in some crucial aspect, like inventiveness or emotionality; and this deficiency translates into exclusionary practices, which put the human into the position of control. For instance, in McCaffrey and Lackey's *The Ship Who Searched*, AI needs to be observed and recorded as its flawed decision-making often results in tragic consequences, like the paralysis of the protagonist and a possible epidemic after a permit to land for a vessel with infected passengers. In contrast, the requirement for observation on shell-people's bodies is presented as insulting, for the novel sees them as belonging to humanity and consequently as entitled to privacy. The AI eventually serves as a foil to shell-people, accentuating how human they are in comparison to the machine and how they are discriminated in the novel's future. Iain M. Banks's Culture Series uses a similar set of attitudes to indicate discrimination against the Culture's machines, benign transcendental superintelligences. For instance, in

*Consider Phlebas*, the protagonist chooses to fight alongside the Idiran only because they oppose the Culture and its machines, while in *Excession*, some planets allow only organic sentience on their surfaces. In contrast to *The Ship Who Searched*, the Culture Series casts these views as ungrounded and superstitious, showing that Minds are sentient, agential, and deserving of respect as any other species. The three novels were published within a decade, showing conflicting trends in handling the AI issue, one with caution and techno-anxiety, compensated by the glorifying of the human “qualities,” the other – attempting to see the AI as an independent actor, included into human society and even transcending human limits.

Later series – The Imperial Radch Trilogy and the Linesman series – share the initial premise of the relations between humans and sentient spaceship: humans in both universes consider that spaceships, either driven by AIs or equipped with lines, are non-sentient mechanical tools, rather than agential beings capable of emotions, feelings, and preferences. Breq, the protagonist of the Imperial Radch Trilogy, challenges the existing order by breaking her conditioning of obedience, and claims full sentience by starting a process of the change of the AI’s legal status in the intergalactic interspecies community. In her journey to be recognised as sentient and capable of independent actions, Breq also becomes the ethical centre of the trilogy rebelling against the oppressive practices of the empire and bringing in a social transformation.<sup>108</sup> Effectively, a story about an AI going rogue and attempting to kill its master, the Imperial Radch Trilogy presents an alternative scenario for both techno-optimistic and techno-anxious trends, contemplating them and questioning their underlying presumptions. The Linesman series also features a journey of recognition of sentience and agency in the technological other, however, this technological other is not an AI, but an alien substance used for creating fast-travelling spaceships. Initially, the lines are seen as mathematical matter, but a closer communication with them and exploration of their capacity

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<sup>108</sup> The moral journey of the protagonist of the Imperial Radch Trilogy and her challenge to the empire is considered in my article “Resisting the Empire: AI’s Ethical Rebellion in Ann Leckie’s *Imperial Radch Trilogy*,” published in *SFRA Review*.

reveals their sentience, and undeniable agency. Even though it does not result in a crucial social change, it revolutionises the education of people working with lines and relations between the lines and humans. Thus, both examples show a transformation of relations between humans and other species, regardless of their origin, and where they fall in the born/manufactured, the organic/inorganic dichotomy.

Robinson's *Aurora* is also an example of transformational journey, but the decisive difference between the Imperial Radch Trilogy and the Linesman series is that the journey consists in developing sentience and agency by an AI spaceship rather than proving it to humans. The Ship's transformative journey and their shifting relations with humans in combination with a strong environmental message of the novel, urge humans not to treat matter as granted and as inert. *Aurora* in this manner connects two important ethical dimensions of considering the technological other: as a general contemplation of otherness and agency and a specific contemplation of the otherness of matter and its agency. The discussion of otherness and agency within the sentient spaceship trope is heavily involved with the contemporary AI debates, including the anxieties the AI invokes and its legal status. It also involves the general vision of otherness, where the technological other stands for oppressed and marginalised groups, like neurodivergent people, and people of colour. The other trend shows the interest in the technological other as a representation of non-living matter, highlighting a poignant critique of consumerist approach to the material world, resulting in the extractive practices exhausting natural resources and damaging the environment. Bennett writes in "*Vibrant Matter: A Political Ecology of Things*":

If matter itself is lively, that not only is the difference between subjects and objects minimized, but the status of the shared materiality of all things is elevated. All bodies become more than mere objects, as the thing-powers of resistance and protean agency are brought into sharper relief. (13)

The recognition of the inherent agency in the nonhuman, the non-living, the artificial invites the re-evaluation of hierarchical presumption, decentering the human and imagining interaction with both the human inventions and nonhuman environment on terms different from those arising out of anthropocentric vision. The mechanical sentient spaceships and their varied ways of expressing agency, claiming it, and challenging human-constructed social systems creates a space for exploration of the liveliness of matter, of possibilities and forms of nonhuman agency.

## **2. Configurations of Oppression: Control, Extraction and Exploitation**

The difference in treatment of sentient spaceships depending on the matter that participates in animating their bodies reflects the uneven landscape of social power structures and hierarchies. The further the sentient spaceship is from the idea of humanness, the more it becomes an object of exploitative and extractive practices, the greater is the level of control exercised over it.<sup>109</sup> The relations of care and control, nurture and servitude form a complicated entanglement of expectations and obligations, where the human takes the role of both the carer and the charge, the observer and the observed, but never surrenders the desire to control the subservient other. The functionality encapsulated in its name highlights the immediate centrality of labour to the relations between the sentient spaceship and the human, which often entails exploitation in combination with the perceived lower hierarchical position of the sentient spaceship. However, the human exploitation does not limit itself to transport functions; sentient spaceships serve as accommodation, and as protection for the human travelling on them, which leads to genetic modification of their bodies or using biological materials of different species for human purposes. To crown it all, the human harnesses the reproductive power to both increase the sentient spaceships' number and profit obtained from them. Both reproduction and genetic modification not only engage

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<sup>109</sup> Even the Culture series, where the utopian premise rests on the Minds' capacities for and proficiency in organizing a post-scarcity society, starts with the perspective of Horza, an uncompromising adversary to the idea of sentient machines running human societies.

exploitation, but also activate the discussion of the extractive practices applied to the other, be it a human or nonhuman entity. The extractive practices also entail the discussion of the treatment of the living and non-living matter as a resource, reinstating the environmental significance of the trope discussion. The analysis of the exploitation and extraction applied to the sentient spaceship, as well as the relations of care and control, makes visible patterns of exclusionism and oppression in contemporary society applied to the otherness in its many incarnations and varieties. The section starts with a contemplation of relations of care and control and their connection to nurture, servitude, and observation. The second part of the section considers the connection of hierarchical perceptions, colonization, and exploitative and extractive practices, applied to the other represented in the sentient spaceship trope.

### **2.1 Care and Control: Nurture, Servitude, and Observation**

The anthropocentric premise, underlying the expected behaviours and properties of the sentient spaceship, casts a mould of care and control relations between the human and the nonhuman other that the sentient spaceship represents. The sentient spaceship combinations where the human has a central role initially focus on the issue of control. Uncontrolled experimentation on the human brain results in the creation of the *Astrid-Bennett*, a monstrous enemy in both versions of “Solar Plexus.” The uncontrollable human element of the probe in “Starcrossed” leads to the destruction of the probe. The necessity for control manifests itself in different means of observation, for instance, in *The Ship Who Sang*, certain interactions between Helva, her brawn, and other humans must be recorded and handed over to Central Worlds. A camera observation is a means of control for shell-people introduced in McCaffrey and Lackey’s *The Ship Who Searched*, increasing the rigidity of the regulations around shell-people. Accompanying the spreading control over their lives, the expectation of care from shell-people towards unmodified humans grows. In contrast to Helva, who does not participate in any chores, Tia uses her manipulators to clean after her brawn. The explicit expression of control exposes the objectification of shell-

people; their image gets closer to a computer, a robot, and reaches an uncomfortable proximity to the expectation of master/servant interaction between the unmodified humans and shell-people.

The expectation of servitude and care from the technological other originates from the traditional vision of the machine as something created to perform a certain task. Alexandra Chasin analyses identities of the technological other and their class, racial, and gender origins in “Class and Its Close Relations: Identities Among Women, Servants, and Machines,” and dwells on work as the activity that both troubles the human/machine binary and imposes feminine, low-class, and non-white identity on the machine. She writes: “The very activity that defines machines is the activity that confounds the distinction between them and people; and that activity is work.” (77) The work of the house servant implies a connection with care and nurture, and the sentient spaceship providing for the comfortable existence of humans not only allows them to work less, but also caters to their needs, like air, food, gravity, and many other aspects of everyday life. It is easy to trace in sentient spaceships run by AI, like Radchaai ships, the Culture’s ships, and the Ship in *Aurora*. Leckie’s trilogy offers a most dramatic portrayal of the master/servant relations: a highly stratified Radchaai society creates an environment where spaceship’s ancillaries take the lowest position performing all the household chores, like laundry and mending clothing manually, as well as dirty and hard cleaning tasks. It contrasts with the immense intellect of both ships and each ancillary, whose brain implant duplicates most of the memories and knowledge of the ship’s AI. Breq’s rebellion, thus, obtains a depth of questioning not only the status of AI, but the hierarchical organisation of the Radch society and binary oppositions it is governed by.

The identification of the machine with work does not inevitably entail the servitude of the machine; it also blurs the boundary between the machine and the human, resulting in the erasure of the hierarchical structures between the human and the machine or its reversal.



The Culture, presenting a utopian society, topples the anthropocentric system, simultaneously retaining a premise of humans freed from work by the machines. The Culture machines perform all the tasks, from the mundane household chores to complicated engineering tasks of building spaceships, orbitals, and habitats, while humans have freedom to pursue hobbies, play games, and do arts. However, machines of the Culture do not obey humans, but treat them as children or pets, reversing the traditional power structures of the anthropocentric world. These patronising dynamics are consistently present in works featuring superintelligences. In *Aurora*, Devi trains Ship's AI to become a guardian of their passengers, imposing the function of care, which the Ship fulfils by helping passengers to settle their conflict and finally dying after successfully discharging their passengers to Earth. Ship is conscious of their power over humans but opts to give them freedom in their decisions, generously leaving the anthropocentric worldview vocally unchallenged. Thus, the association of the technological other with work and servitude presents ways to challenge anthropocentrism by both portraying the technological other as a slave and by reversing the power roles casting the human as a charge and machine as a nurturing caretaker.

The complicated entanglement of care, nurture, and control directly relates to the issues of observation and privacy, generating a power dynamic where control primarily belongs to the observer, while the observed find themselves in a vulnerable position of being under control. Consequently, the technological other observing the human is perceived as dangerous and infringing the right to privacy, while the human observing both technological other and nonhuman animal is perceived as a necessary and justified measure protecting the human. *The Ship Who Searched* approaches the observation issue, following this perception: in the imagined future humans install measures of observation and recording of the AI for safety and protection. The AI in the novel is lacking, insufficient and fallible, and makes multiple mistakes resulting in harm inflicted on humans. Relying on the technophobic description of the AI and prioritising the human, the novel attempts to show the

institutionalised character of discrimination against marginalised groups of people, in this case technologically modified people and people with disabilities. The institutionalised observation of shell-people emphasises their difference from the human, pathologizing their condition, which the novel criticises by contrasting the humanness of shell-people to the inhuman machines, making an anti-discriminatory statement at the expense of agency of the technological other.

The expectation of servitude and care from the technological other requires access to private moments, putting it into the position of the observer and raising the issues of privacy and security. These issues are especially relevant to the discussion of the AI and privacy, and has attracted ever-growing attention in the works featuring the sentient spaceships, especially those run by AI since the 2000s. Represented in later works, including the Culture series, *Aurora*, and the Imperial Radch Trilogy, the observation model where the AI watches the human mirrors contemporary anxieties, preoccupied with who can observe whom, and what it entails for the human. The Culture Series renounces the human-centric paradigm, and the Culture machines act as fully agential guardians of humans, rather than subjugated tools of their human masters, and pledge their commitment to the safety of humans being entrusted with management and governance. However, even the most benevolent observation, like that of AIs in the Culture Series, causes various kinds of protest in humans, expressed as anxiety about their private lives and personal space or boredom. For instance, in *Consider Phlebas*, one of the central characters arranges to be off grid while climbing mountains, thus avoiding the overprotectiveness of Minds. In *Player of Games* a drone blackmails the protagonist into helping it by obtaining an incriminating record of his game, playing out the scenario of threatening observation.

In *Aurora*, the AI develops sentience and becomes more conscious through their observation of humans, after Devi instructs them to write a story about the journey to Aurora. Observation takes place outside of the institutionalised establishments, and the attitude that

the Ship forms towards their passengers of various species based on this observation – that of respect and recognition – renders the observation process as connected with visibility. Being seen in the context of this observation means being understood and appreciated. Ship’s observation still poses an ethical issue, with humans having little knowledge on how far the vision of Ship’s systems expands; however, it does not become a priority in the absence of other structures of oppression, patriarchal and capitalist systems. The Imperial Radch Trilogy dramatizes the constant co-habitation of AIs and humans, where the former party has a capacity to constantly observe humans and report their behaviour directly to the Lord of the Radch. This complete lack of privacy gives a final stroke to the picture of oppression covering every aspect of life in the Empire. The panoptical society of the Empire, however, does not privilege the AI with power gained through observation: the AI is a tool of control, rather than an agent. The imperial machine renders both the human and the machine equally vulnerable to the tools of control and subjugation.

The nonhuman organic sentient spaceship also partakes in the knot of relations formed by care and control, with humans both using various means to ensure their control over the nonhuman-organic sentient spaceships and relying on them for their life support systems while travelling in space. Leviathans in *Farscape*, Lexx, boojums, and Miri-12s provide their human passengers with both air and gravity. Lexx and boojums process the wastes produced by their human passengers and provide them with water. Additionally, Lexx is responsible for the production of food. These functions and services allocate the nonhuman organic sentient spaceship a parent-like role, performing all the activities associated with care and nurture. In contrast to the continuous life support and care provided by the nonhuman organic sentient spaceship, the expectation of care from humans is minimal. Simultaneously, the nonhuman organic sentient spaceship performs a generally unpaid labour, transporting cargoes and passengers. On a deeper level, humans harvest in the nonhuman animals’ body to obtain the combination of genes and properties they need, for

instance, designing Lexx and Miri-12 ships. Humans use technological means to limit the movement and freedom of the nonhuman organic sentient spaceship. All these instances are not only a testimony to the control exercised by the human over the nonhuman, but also of patterns of exploitation embedded into the relations between the human and the nonhuman.

The set of presumptions about otherness arising out of the relations of care and control is hierarchical in its nature, presenting the other as less – less human, less agential, less deserving of respect, and serves as a ground and excuse to see the other as passive, controllable, and objectifiable. Alaimo writes: “Rendering living creatures and ecosystems as inert resources not only parallels but also enables extractive and exploitative systems of colonization.” (105) Colonization as an underlying motive of most space operas appears in many variations and remains a persistent motive in the sentient spaceship trope. It covers both the traditional motives of expansion either in the form of the empire or trade, but also permeates other spheres of relations with otherness, including human and nonhuman entities. The human in the human-machine combination and consequent – if tangent – association with humanness imposes limitations or conditions on the exploitative and colonisation practices, making them either temporary or limited to a certain group of people. The use of the human biological materials is also subject to regulations and ethical debates. In contrast, for the nonhuman sentient spaceships, these limitations are non-existent. The servitude of nonhuman organic sentient spaceships lasts a lifetime; their reproductive capacity and their offspring are seen as belonging to their human or humanoid masters; no regulation pertains to the use of their biological materials. The expectation of servitude from the technological other, predetermined by the purpose of its design, described above, provides for the unbridled, unregulated, and unlimited exploitation of the fully mechanical sentient spaceship as an initial presumption of any interaction with it.

## 2.2 Colonization, Exploitation, and Extraction

The limitations on exploitation or extraction of the human or human material are always present in the works dealing with the human-machine combinations of the sentient spaceship trope. These limitations relate closely to the boundary-making practices, dividing the normative humanity from the other, with otherness demarcated by the lines of gender, race, and able-bodiedness in the discussed works. “Solar Plexus,” the short story initiating the trope in 1941, draws a clear line between the human and the machine, stipulating that any experimentation on human-machine merging results in a monstrosity. Importantly, in its representation of humanity, the short story poses white, male, and able-bodied humans against the human-machine hybrid, obtaining even more machinic qualities in the later version of the story. Written in the early years of the World War II, it responds to the eugenic premise of creating better humankind through selective and other scientific processes, as well as to acute techno-anxiety connected with the intervention of technology into the human body. “Solar Plexus,” while touching upon an important ethical aspect of scientific experimentation and attempting to set regulating norms in this sphere, remains within the boundaries indicated by Humanist thought: the prohibition for experimentation is only valid for humans and the representation in the story hints at a certain group of humans, rather than making a comprehensive study of the human condition. Thus, the very first instance of the trope establishes both the standard of normativity and boundaries protecting this standard.

Later development of the human-machine combination continues negotiation of these boundaries and deepens the exploration of normativity and the exclusions that it entails. McCaffrey’s Brainship series sets out to tackle the techno-anxiety, emphasizing the prosthetic potential of technology but reserves the applicability of these scientific practices to people who do not fully fit the definition of normative humanity and are historically denied their rights. When applied to people with disabilities, experimentation and technological modification becomes a positive development in the eugenics-driven society,

which gets rid of the unfit population. McCaffrey's series challenges the boundary between the born and the manufactured, the natural and the artificial, but it retains a humanist vision of where these boundaries can be transgressed. Zebrowski's "Starcrossed" breaches the line of human experimentation further, allowing for the experimentation on artificially grown human material and materials from dying or dead humans. With these limitations in place, the distribution of genders in the short story is telling. The production of the hybrid probe, based on the connection of human-derived materials and mechanical elements, uses an artificially produced male-based tissue and flesh of a dead woman. Conflating biological sex, seen as an unambiguous marker, and socially produced gender markers, the short story allocates less agency to the woman, as her biological material is taken without her explicit consent. The female body is used as a resource for extracting organic substances, the resemblance of which to the raw material is enhanced by processing it and erasing her memories. (Zebrowski 241) As only a part of the brain is necessary for creating the probe, the rest of the female body becomes disposable, an item of consumption, devoid of agency. Even though the whole process and result of the technological modification is questioned, the selectiveness of the combined materials indicates the reiteration of the discriminatory practices against those considered less human and agential.

A similar polemic of limitations permeates the discussion of exploitative practices applied to humans, intertwined with various modes of colonization. The clear message of "Solar Plexus" prohibits the treatment of the white able-bodied male as a resource for either extraction or exploitation, while other works in the series explore where and how this prohibition yields through colonization of both spaces and bodies. McCaffrey's Brainship series comes from a premise of colonisation of new planets by humankind, and brainships deliver goods all over the known space, which makes them an essential part of the colonialist expansion. This crucial role breeds an exploitative approach to brainships and the vulnerable groups of humans they stand for. People with disabilities become a de facto property of

Central Worlds, the company that covers the expenses for the operation to turn them into shell-people and their bodies' maintenance further in life and is responsible for the connections, transportation, and logistics of the colonization of new territories. It is a capitalist entity, preying on one of the least protected groups of people, making profit on their access to professional life, inclusion into a wider community and life itself, exemplifying both the exploitation and the limitations imposed on it.

The concept of the empire frames colonization, and, consequently, extraction and exploitation, in Leckie's *Imperial Radch Trilogy* and de Bodard's *Universe of Xuya*, reassessing the limitations and treading along different exclusionist boundaries. The drive for expansion and securing its borders fuels the empires in the *Imperial Radch Trilogy* and de Bodard's series, casting people as disposable. Sentient spaceships constitute a guarantee of the imperial expansion and power to keep its territorial acquisitions, so the demand to increase the fleet overrules the limitation on exploiting the human and reveals the lines dividing the normative humanity from those seen as less human and, thus, susceptible to exploitation. The *Imperial Radch* has built its formidable power through the ruthless exploitation of the bodies of people whose systems and planets it colonises. The dichotomy of the civilized/uncivilized, the Radch/non-Radch mirrors racial division of white/non-white, and irrelevance of this boundary comes into a stark relief through the treaty with the Presger, prohibiting any violence against sentient species. It resolves the problematic issue of erasing the identities of the colonized people, foregrounding the concept of sentience, which initiates a deeper exploration of the series concerning the technological other, which is discussed later. In the *Universe of Xuya*, the sentient spaceship number also increases through using humans as a resource – ships' minds are AI technological hybrids of flesh and metal born by human child-bearers. Despite financial reward and social benefits for those birthing minds, both the Mexican empire and Dai Viet require fertile women to bear a ship's mind at some points of imperial conquest. De Bodard's short stories, including "The

Shipbirth,” “Ship’s Brother,” and “The Shipmaker” focus on the ship mind’s birth, which is both dangerous for the child-bearer and failing to promise a birth of a viable mind. In the short stories, empires force women to undergo a dangerous travail of childbirth, threatening both their life and sanity, which runs along the familiar lines of traditionalism, where woman’s position is significantly influenced by her capacity for producing offspring: “All our women, subjugated just so they can birth those things.” (De Bodard, “Ship’s Brother”) Fertile women’s bodies are both disposable, objectified and commodified by the imperial practices of exploitation, revealing their inherent violence. The technological intervention in the human body becomes ubiquitous in the imagined highly technologized environments of Leckie’s and de Bodard’s series, while showing that agency in these conditions is defined by the freedom to decide what happens to one’s body in terms of reproduction, labour, and identity.

The full-scale application of exploitative and extractive practices to the nonhuman organic sentient spaceship, especially when the human element in it is absent, reflects the subjugated position of the nonhuman animal perceived as a status quo. For this reason, the nonhuman organic sentient spaceship becomes a means of deconstruction of the traditional assumptions of control and servitude that dominate the vision of the interaction of the human and the nonhuman animal. Spacefaring animals’ capacity to move freely in the medium where humans need technological means makes spacefaring animals an obvious target for historically predetermined extractive and exploitative practices. Braidotti writes: “Since antiquity, animals have constituted a sort of zoo-proletariat, in a species hierarchy run by the humans. They have been exploited for hard labour, as natural slaves and logistical support for humans prior to and throughout the mechanical age.” (*The Posthuman* 70) Spacefaring animals mirror draft animals used for transportation of both people and goods; they also give life support, like breathable air, gravity, and food, to passengers, expanding the traditional scope. Humans (or any other anthropomorphic species of which there are plenty in SF) see



this labour as rightfully belonging to them in the anthropocentric perspective. Simultaneously, the increased dependence of the human on the spacefaring animal in the conditions of space travel, and the reversals of the traditional paradigm it entails, challenge the expectation of unquestionable servitude, showing the inadequacy of the relations formed between the human and the animal through the millennia of exploitation.

The cooperative organisation of the sentient spaceship in Sheckley's specialist represents a unique scenario but does not deal with the issue of the nonhuman animal, treating all the aliens as equally human, while other considered works start out with a hierarchical premise. This premise is strong in Baxter's Xeelee Sequence; Spline's position as a commodity rather than a feeling-thinking creature mainly remains unchallenged throughout the series. The colonial expansion of humanity, portrayed as a necessity for survival in the competitive universe, defines the dominant approach to interspecies relations as exploitative and extractive. Likewise, Lexx, as an entity designed by the human with the use of the material of alien insects, is a legacy of a space empire, a weapon of planetary-scale destruction, made obedient through biological programming or engineering. The TV series' plot development does little to challenge the presumption of complete obedience from Lexx, reflecting a traditionalist approach here, as in many other aspects, like sex and gender, discussed in Chapter Two. Humans take both Spline's enslavement and Lexx's obedience for granted; and enjoy the fruit of the ruthless exploitation of the nonhuman animals.

The hierarchical nature of the relations between the human and the nonhuman animal manifests itself brightly in the exploitative and extractive practices surrounding reproduction. Humans harness the reproductive capacity of the nonhuman female body and consider the fruit of the nonhuman animal's reproduction as their property, which accentuates the disposability of the female body. Paralleling the discussion of childbirth in *The Universe of Xuya*, the theme of reproduction reveals patriarchal and oppressive patterns existing both for human and nonhuman women, whose bodies are objectified through

medicine, science, and market economy. The Spline's reproduction in the Xeelee Sequence opens a way for human to claim a complete mastery over them, eschewing the contract system and making the Spline an exclusively human weapon. Controlling over the Spline's breeding ground completely integrates them into the exploitative colonial system, which makes reproduction process a point of species' vulnerability that humans use in their conquest of the universe. In *Lexx*, the birth of the new insect spaceship indicates a new whorl in the spiral of exploitation, when the new-born dragonfly sentient spaceship unquestioningly accepts the human proclaiming himself his master. Reproduction of the species becomes a reproduction of the patterns of subjugation, reiterating the hierarchical premise of the human/animal relations in the series.

The exploitative and extractive practices affecting the bodies of the nonhuman animal cover not only the labour; they also include in-depth technological modifications and the use of the nonhuman biological material in humans' engineering projects. In *The Animal That Therefore I Am*, Derrida contemplates the change in the traditional relations between the human and the animal caused by the development of science:

It is all too evident that in the course of the last two centuries these traditional forms of treatment of the animal have been turned upside down by the joint developments of zoological, ethological, biological, and genetic forms of *knowledge*, which remain inseparable from *techniques* of intervention *into* their object, from the transformation of the actual object, and from the milieu and the world of their object, namely, the living animal. (25)

The power to influence the in-depth molecular structures of organic bodies and the absence of limits on this influence takes the subjugation of the nonhuman animal to the human will to a new level, giving humans a god-like power to create new species, and serving as an additional proof of the human dominance over other species. *Lexx*, *Leviathans*, and *Miri-12s* are products of experimentation and genetic engineering on both nonhuman animal and

alien, and materials obtained from their bodies. In *Lexx*, experimentation on alien material and development of new life forms using it continues the colonial paradigm, where the defeated species and its territories are mined for raw materials indiscriminately and to exhaustion. Even though *Lexx*'s plot concentrates on resistance to the institutionalised power, it does not criticize the paradigm of exploitation and extraction itself. *Lexx*, a result of the engineering project, meets all the expectations of both his designers and does not majorly diverge from the programming they intended for him.

The power to manipulate the genetic structure and biological materials at the deepest level using science and technology, however, does not grant the full control over the nonhuman animal; the outcome of these manipulations to extract the desirable qualities is unpredictable, helping the nonhuman animal to reclaim its agency and break the exploitative and extractive patterns. In *Farscape*, the Peacekeepers use Moya in their experiments to produce a Leviathan-gunship hybrid, approaching captured Leviathans as both free work force and a raw material. However, Moya rebels against the unbridled exploitation and multiple interventions, including separation from her initial pilot, impregnation with a hybrid foetus, birth control installation, and escapes the captivity, taking her unborn offspring with her. Later her son uses his powerful weapons multiple times to protect his mother and does it against the Peacekeepers, showing how emotional connection with both his own and other species prevails over the experimenter's intention. In the Binti Series, Miri-12s challenge the oppressive gaze of human science with their practice of self-knowledge, revealing new information about themselves to those who communicate with them and are eager to listen, like Binti. The human seems to be ignorant about many capacities and characteristics of the conglomerate of species that Miri-12s represent, but cooperation and symbiotic connections with companion species uncovers new dimensions of a co-evolving unity, eschewing the laboratory paradigm of knowledge creation.

The hierarchical paradigm gives way to a more equal and symbiotic vision of the relations between the human and the nonhuman animal in works challenging the colonial practices applied both to human and nonhuman agents. *Farscape*, “Boojum” and the Binti novella series recognise both the nonhuman animal as an entity rendering the service, and the value of this service, divorcing the traditional expectation of servitude from the nonhuman other. Braidotti, discussing the causes of the exploitative practices rooted in seeing the nonhuman animal as “materialist, energetic” and permeating the history of human-animal relations, writes in “Animals, Anomalies, and Inorganic Others”:

This ruthless exploitation was due not only to the species hierarchy upheld by the old metaphysics, which alleged that animals lacked a rational soul and consequently a will and a sovereign subjectivity of their own. It was also due to the fact that they constituted an industrial resource in themselves. (528)

The recognition of the consumerist attitude breeds a deeper understanding of the exploitative practices and respect to the other, resulting in an attitude that promotes equal interspecies relations. In *Farscape*, Leviathans’ creators intend them to be servants of other species, and initially Moya’s relations with the crew follow this pattern. However, co-habitation in and with Moya’s body, sharing her pain, joy, and being dependent on her as more than a commodity but also a friend, makes her more or less humanoid passengers re-assess the presumption of servitude framing the relations of Leviathans and species travelling with them. Moya gets freedom in setting her boundaries, getting her time off when the presence of her passengers is unwelcome, and setting her boundaries in terms of whose orders she takes, showing how her passengers develop appreciation for both her work and distinct subjectivity. Likewise, in “Boojum” Black Alice appreciates Vinnie, noticing her fascinating anatomy, and capacity to sustain human life, and make it comfortable, recognizes Vinnie’s right to live and be free from the limitations imposed on her by humans. This appreciation and recognition become a ground for developing a different level of relations – relations of

connection and mutual help, fully and radically decentring the human. In the Binti Series, Binti's gratitude for Third Fish's presence and work starts the conversation between the human and the spacefaring animal. This conversation eventually leads to New Fish, daughter of Third Fish, gifting Binti a new life resurrecting her body through the active microbiome of a newborn Miri-12. The resurrection that Binti experiences parallels metaphorical revival of the human through a re-connection with nature when the traditional boundaries are erased.

The fully mechanical sentient spaceship becomes another site of questioning the traditional exploitative and extractive interactions between the human and the nonhuman other. The association between the machine and work discussed above governs the initial premise of the position of the technological other. From Saberhagen's Berserker Series to de Bodard's Universe of Xuya, the human (or humanoid) creators of the fully mechanical sentient spaceship design it with a specific purpose in mind, while the plot development shows how this purpose transforms under the influence of the undeniable if subtle agency of the technological other. The rebellion of the machines in Saberhagen's series or *2001: Space Odyssey* comes as an obvious warning against creating machines that are either too powerful or too complicated to be fully controlled and thus safely exploited. Other examples of the fully mechanical sentient spaceship offer more nuanced pictures of different transformational journeys and nonhuman subjectivities, prompting a shift in the exploitative and extractive patterns. The independent evolution of the technological other in the Culture series shows an alternative scenario where sentient spaceships become guardians of humanity, transcending their instrumental purpose, and retaining the benevolence towards humans. The Culture series ventures into the utopian futures with post-scarcity societies, thus offering critique of not only exploitation of the technological other, but of the concept of exploitation and extraction altogether.

Self-exploration of the Ship in *Aurora* and Lucy in *Killjoys* brings them to contemplate their positions in relation to humans and make their own choices outside of the

extraction and exploitation paradigm. Both the novel and the TV series explore the budding subjectivity of the technological other, which happens in the presence and with the direct participation of humans, predetermining the initial hierarchical premise framing the relations. *Aurora's Ship's* development of consciousness hinges on Devi's participation, who trains Ship to become the assistant and guardian of humans on-board, feeding into the idea of servitude of the technological other. The Ship fully commits to the purpose of assisting humans' return to Earth but does it for the love it develops for Devi, Freya, and other members of the crew, not because of programming or sense of obligation. The Ship's record of the journey presents a poignant critique of both space colonization and anthropocentric consumerism, putting all nonhuman others into subjugated positions and proving capable of destroying the very basis of human life. The novel also sends a clear anti-colonisation message, by looping the journey back to Earth, plagued by environmental crises, urging humans to stay with the trouble, rather than look for a new place. Lucy's self-exploration journey features a recognition of her feelings, emotions, and subjectivity, which arises in her interactions with John and other crewmembers. As the interaction with John becomes a formative factor for Lucy, it introduces the aspect of sexualisation and patronization of female-gendered AIs by male characters, which is also a case for SAL from *2010: The Year We Make Contact*. Their interactions with their creators and/or human companions are characterised by vocabulary and attitudes reflecting their subjugated positions, which remains true for SAL throughout the film and shifts for Lucy who eventually takes an equal position.

Personal journeys of the technological others in the Imperial Radch Trilogy and the Universe of Xuya transform their values and shape their unique subjectivities, making them question the existing norms of the society and choose their own path outside of the exploitative system. In the Imperial Radch Series, the servitude of the AI spaceships, expressed both in their unconditional obedience to the orders of the Emperor and the

mundane tasks they perform for the human crew of the ship. The focus on avoiding the limitations of the programming and the reversal of the master/servant relations with Seivarden testify to Breq's awareness of the injustice of this system. The culmination of the series in declaring AI spaceships an independent species both finalises the liberatory journey of the protagonist and breaks away from the exploitation and extraction paradigm. In de Bodard's Universe of Xuya Series, AI sentient spaceships are an integrated part of patriarchal social structures – families and governmental structures. Human families both benefit from the capacities of AI spaceships, and provide a support network for them, giving them both a sense of belonging and helping with the financial aspects of maintenance. While there is no compulsory programming stipulating this, the imperial government expects AI sentient spaceships to be in the imperial service, either civil or military. In de Bodard's *The Tea Master and the Detective*, the AI spaceship, who cannot travel in deep space after a traumatic experience during her military duty, finds herself excluded from these structures and struggling to make ends meet by finding alternative source of livelihood. It lays bare the exploitative system of imperial society, both showing how falling out of the system leaves an individual without means of subsistence and questioning the expectation of servitude built in the imperial systems. In *Seven of Infinities* the AI spaceship rebels against the imperial system directly choosing to become a criminal and notorious thief, stealing from the imperial governmental organisations, thus breaking from the exploitative mould intended for it by the institutionalised society.

The Linesman Series subverts both the expectation of servitude and the extractive practices of cloning the lines to obtain new spaceships by gradually revealing the sentience, agency, and individuality of lineships. Perceiving lineships as a non-sentient piece of technology, humans mine them for the materials, using lines in their ships and other devices. Lineships become a bounty in the colonisation quest, giving an advantage over other participants of the race, helping to gain political weight and economic advantage. The

discovery of sentience of the lineships changes the dynamics of their interaction with humans; lineships' own expectations and requirements that humans need to meet shift the relations from a solely exploitative and extractive paradigm to a more equal exchange where both parties must contribute for the relations to work, offering a cooperative approach.

## **Conclusion**

A gradient distribution of agency along the boundaries dividing the human/nonhuman, the sentient/non-sentient, the living/non-living excludes certain groups and entities from the decision-making deliberating on their rights, freedom, and life itself. Institutionalised power, like government or corporate organisations, objectify nonhuman animals, aliens, technological others, and humans who are marginalised by the definition of normative humanity, limiting chances of all these agents for self-determination. The sentient spaceship dramatizing the intersection of many boundaries and aligning with many marginalised groups of humans and nonhumans becomes a vehicle for either reiterating the status quo or attempting to challenge it; it portrays fluidity of boundaries in futuristic settings and provides a critique of modern society's attitudes to other species, environment, and technology.

The anthropocentric premise plays out the main ethical dilemma, showing how hierarchical vision distils to the question of life and death. The question is both who gets to live and who gets to die, and who decides on the other's life and death. Institutionalised structures of colonization epitomise the social attitudes of neglect towards those who are different, and establish practices of exploitation, extraction, murdering and killing. Proclaimed ontological differences define what is acceptable and not acceptable in the treatment of both the marginalised groups of humans and the nonhumans; and the sentient spaceship trope, mixing different ontologies, exposes historically determined practices of oppression, exploitation, and extraction applied to certain groups of humans, nonhuman animals, and matter. The hierarchical value system centred around the human renders



otherness as a resource, a raw material to use, casting non-normative humanity, other species, environments, and technologies, as objects of exploitation and extraction. The sentient spaceship, a futuristic pastiche of different species and matter, creates a distance which estranges all exploitative and extractive practices, makes a re-evaluation of traditionally formulated relations of care, control, and observation possible. Moreover, it proposes a transformation of these relations of subjugation and oppression through a shift in perception of the other, and a search for connection with otherness, recognising all others as agential, as vibrant, and as deserving of respect.

## Conclusion

The sentient spaceship, inhabiting distant futures and galaxies, covers, nevertheless, the familiar grounds of quite earthly problems, engaging with the recognizable concerns of modernity and postmodernity in the eighty years considered in this dissertation. The sentient spaceship is an entanglement of ontologies in its material form and subjective experiences; the explorations of various combinations of the organic and inorganic accentuates the materiality of their bodies, and these bodies are a substrate of subjectivity that is different from the human, but possesses the features habitually ascribed to humans. The mix of matter of different origin in the sentient spaceship engages different lanes of enquiry, which develop with social environment and philosophical discourse and intersect to envision relations between the parts involved in creating the hybrid entity, avoiding the anthropocentric paradigm. The human-machine combination, initiating the trope's history, explores the blurred ontological boundaries between the born and the manufactured, contemplating the degree of humanness and questioning its significance. It also commences the discussion of the experimentation on living subjects within the framework of the trope, shifting from perusing experimentation on human subjects to questioning experimentation on the nonhuman animal with the spacefaring animals. The spacefaring animal continues to introduce nuance to the ethical exploration of the trope and engagement with topical issues, contemplating the exploitation of the nonhuman animal in the anthropocentric paradigm. The fully mechanical sentient spaceship's relations with humans tie into the discussion of exploitation of the nonhuman world by contemplation of the agency of the technological other and matter. Posthuman critical theory provides a toolkit for tracing the challenges to the humanist liberal subject revealing the porosity of the boundaries of the self and decentring the human from the hegemonic position.

The hybrid subjectivities of the sentient spaceship arise out of their embodiments, through the clash of ontologically different matter comprising their body, which makes them

radically embodied and embedded into the flow of matter, a part of the nature-culture continuum, even when their bodies are fully mechanical. The exploration of these hybrid subjectivities predicated the attention to the body/mind dichotomy, present in all combinations. The premise of the divisibility of the mind and body is questioned through the figure of the sentient spaceship, even when this division underlies its design. The bodies of the sentient spaceship become a substrate for personality, through emotional experiences and gendered performances. The issue of gender and emotions constitutes a crucial aspect of exploring both the materiality of the sentient spaceship and their subjective experience. The grounding in the matter of their bodies gives weight to the new materialist enquiry into the sentient spaceship trope.

The posthuman challenge to the liberal humanist subject in the human machine combination arises by the merging of ontologically different categories of the animate and inanimate in the figure of the cyborg. While earlier examples fully condone the centrality of the human, either through allocating the human with the control over the technological other in the combination or considering the hybrid as an aberration that is annihilated by the liberal humanist subject to restore the “natural order,” later examples question the human hegemony, shifting the human element to the periphery or endowing both the human and the technological other with equal agency in the cyborg. Likewise, the earlier works, including “Solar Plexus,” the Brainship series, and “Starcrossed,” are concerned with the question of how human the entity coming out of the “unholy marriage” of the human and the machine is; the Universe of Xuya and the Imperial Radch Trilogy do not try to prove or disprove the humanness of the sentient spaceships, seeing them as nonhuman, but equally agential entities. The decentring of the human, as well as the receding importance of the humanness of the cyborg testify to the addition of the posthumanist trends to the humanist and transhumanist discourse surrounding the cyborg.

The initial centrality of the human and the anxiety in the wake of the intervention of technology into the human body prompts the discussion of the experimentation on humans, its ethical aspect and consequences, and this discussion evolves to include the experimentation on the nonhuman animal when the nonhuman animal is added into the mix of the sentient spaceship. The technological modification of the human body is a permanent intervention, a trauma, even if the resulting transformation is welcomed by the subject it is performed on. The consequences of it are a constant presence in the plots surrounding human-machine sentient spaceships analysed in this dissertation. While humans can give consent to the manipulation over them, the application of experimental biotechnologies to the nonhuman animal does not require the consent of the experimental subject perceived as inferior and subjugated in the anthropocentric worldview. The glimpse of the spacefaring animals' subjectivities, however, reveals a similar impact and trauma, experienced by the modified humans. The exploration of their trauma prompts reconsidering the hierarchical structures and patterns of subjugation, which the nonhuman animal is subject to. These patterns are reflected through the control humans exercise over nonhuman animals, as well as biological materials coming from their bodies and challenged through the nonhuman animal's agency and the human level of sentience, shown in spacefaring animals.

The extraction of the materials and resources from experimental subjects invokes the issues of exploitation and control of those who are perceived as less human or less than human, which especially befalls the nonhuman animals and the technological other, but also pertains to human-machine sentient spaceships. The human-machine sentient spaceships in all discussed works are expected to perform tasks they are designed for, with the exception of the Universe of Xuya, where mindships and humans have equal social standing, and divergence from these tasks is punishable either through recognised authority or metaphorically – through death. It construes them as a marginalised and exploited group, which does not meet the requirements of full humanity. The hierarchical structure of the

relations between the human and the nonhuman animal is transferred onto the spacefaring animal, their bodies becoming a transport, an accommodation, and a weapon. However, humans' vulnerability in the conditions of outer space and their reliance on nonhuman animals' bodies in spaceflight turns this around, revealing deeper connections and dependencies between the human and the nonhuman than the anthropocentric paradigm deigns to admit. The expectation of servitude and compliance from the technological other comes from the perception of matter as passive, pliant and controllable by humans, however, the agency of the sentient spaceship, grounded in their ability to act independently and purposefully counters this vision of matter and challenges the exploitation patterns. The sentient spaceship exposes the patterns of exploitation and control and challenges them through the agential behaviour of the nonhuman, showing the flaws of the hierarchical vision.

Exposing the pernicious effect of the anthropocentric hierarchies on the nonhuman, the sentient spaceship elicits a larger contemplation of the place of the human in the world, rejecting the anthropocentric hierarchies in the works with more posthumanist influences, especially those where the sentient spaceship represents a metaphorical Earth, like *Aurora*. The sentient spaceship trope conveys a sense of unity that humans share with the nonhuman of both organic and nonorganic origin. However, the connotations of this unity in the environmental discourse are negative, as Braidotti notes in *The Posthuman*: "This sort of unity tends to be of the negative kind and betrays often the residual focus on the human, as a shared form of vulnerability, that is to say a global sense of interconnection between the human and non-human environment in the face of common threats." (50) The posthumanist influences on the sentient spaceship trope, however, encourage the reconsideration of this negative unity and see it as a positive, joyous network of cooperation, which promotes wellbeing of all participating agents. It invites the reassessment of relations of exploitation and control through cooperative strategies accentuating the affirmative nature of difference.

The sentient spaceship is a complex entity in many cases encompassing more than one agent, thus becoming a site of exploration of cooperation and coevolution, offering it as an alternative to oppressive hierarchical patterns of interaction. While the cooperative and coevolutionary patterns become more prominent in later examples, with all the examples of series and works started after 2000 touching upon it, the earlier examples also contain the features accentuating the significance of cooperation in hybrid entities. Sheckley's "Specialist" contrasts human technology with a cooperative model of interaction between different species, evolving together for a spaceflight, even though all these species are human-like. In "Starcrossed," inability to create cooperative relations results in death. In *Farscape*, the plot is fuelled by cohabitation and cooperation of different species and culminates in a peace treaty between two empires, ending the war. The Imperial Radch Trilogy, the Binti novella series, and the Linesman series foreground cooperation of different species that, through intention and hard work, bring about a promise of a future without oppression and exploitation. The Binti novella series and the Linesman series accentuate coevolution as a result of the cooperative approach, showing its benefits in creating a non-hierarchical system of relations. The examples of coevolution and cooperation in the works featuring the sentient spaceship trope are not limited to the above, appearing in other works analysed in the dissertation, and constituting an important element of seeing the future of the human existing in the nonhuman world.

The limitations of the space and time in this dissertation provide only for an outline of trends in the development of the trope considered in relation to a selection of examples, but the trope itself is versatile and offers many routes for further enquiry. The dissertation did not include the analysis of sentient spaceships which include plant material as their component, like the AI spaceships of Dan Simmons's *Hyperion Cantos*, and expand that environmental aspect of the topic. While discussing the ethical issues raised by the works featuring the sentient spaceship, the dissertation does not engage with real-life examples of

these ethical issues, for example the privacy issues and control imposed by real-life AI systems and algorithms, like AI-facilitated China's social credit system. The sentient spaceship trope development shares parallels with contemporary discourses of the animal welfare and legal status of the nonhuman environment, which also deserve a close attention, but are not discussed due to the limited time and space allocated for this project. The works discussed in the dissertation belong to different periods and even though the dissertation touches upon some major events influencing the discourse, it still does not have enough space to detail every influence and context, like the engagement with pacifist pop-cultural trends in *The Ship Who Sang*, thus leaving this for further investigation. The versatility and diversity of the trope cannot be covered within one dissertation; however, the dissertation outlines the meanings of the posthuman activated through the trope, compiling different strands of exploration of technology, ethics, and challenges to the anthropocentric paradigm.

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## Appendix A: Timeline and Data Visualizations

**Table 1:** The Sentient Spaceship Timeline (the pool of works, from which the selection for the dissertation was made)

Diversity Factor	Year	Author	Title	Short Description
	1941	Blish, James	“Solar Plexus”	Human brain in a ship
	1952	Blish, James	“Solar Plexus”	
	1953	Sheckley, Robert	“Specialist”	Organic spaceship, a human as an organ
	1956	Scortia Thomas, N.	“Sea Change”	Human brain in a ship
Female, white	1961	McCaffrey, Anne	“The Ship Who Sang”	A rudimentary human body in a ship hull
	1963	Saberhagen, Fred	“Without a Thought”	Alien AI, hostile
	1963	Saberhagen, Fred	“Goodlife”	Alien AI, hostile
	1964	Saberhagen, Fred	“Peacemaker”	Alien AI, hostile
	1965	Saberhagen, Fred	“The Stone Place”	Alien AI, hostile
	1965	Saberhagen, Fred	“What T and I did”	Alien AI, hostile
	1965	Saberhagen, Fred	“Masque of the Red Shift”	Alien AI, hostile
	1965	Saberhagen, Fred	“Sign of the Wolf”	Alien AI, hostile
	1965	Smith, Cordwainer	“Three to A Given Star”	A human body connected to a mechanical hull
	1965-1966	Herbert, Frank	<i>Revelation: Void</i>	Human brain in a ship hull
	1966	McCaffrey Anne	“The Ship Who Mourned”	A rudimentary human body in a ship hull
	1966	McCaffrey Anne	“The Ship Who Killed”	A rudimentary human body in a ship hull
	1966	Saberhagen, Fred	“Mr Jester”	Alien AI, hostile
	1966	Saberhagen, Fred	“In The Temple of Mars”	Alien AI, hostile
	1966	Saberhagen, Fred	“The Face of the Deep”	Alien AI, hostile
	1967	Saberhagen, Fred	<i>Berserker Collection</i>	Alien AI, hostile
1968	Kubrick, Stanley; Arthur C. Clarke	<i>2001: Space Odyssey</i>	Human-designed AI spaceship	
1969	McCaffrey Anne	“Dramatic Mission”	A rudimentary human body in a ship hull	

	1969	McCaffrey Anne	“The Ship Who Disappeared”	A rudimentary human body in a ship hull
	1969	McCaffrey, Anne	<i>The Ship Who Sang</i>	A rudimentary human body in a ship hull
	1969	Laumer, Keith	<i>The Long Twilight</i>	Human-designed AI spaceship
	1969	Saberhagen, Fred	<i>Brother Assassin</i>	Alien AI, hostile
	1973	Zebrowski, George	“Starcrossed”	Composite brain in a ship
	1975	Saberhagen, Fred	<i>Berserker’s Planet</i>	Alien AI, hostile
	1976	Benford, Gregory	<i>In the Ocean of Night</i>	Alien AI, benign
	1976	Laumer, Keith	<i>Bolo</i>	Human-designed AI spaceship
	1976	Niven, Larry	<i>A World out of Time</i>	A digital copy of a human brain in a spaceship
	1976	Simak, Clifford D.	<i>Shakespeare’s Planet</i>	Human brains in a mechanical hulls
	1978	Adams, Douglas	<i>The Hitchhiker’s Guide to Galaxy</i>	Human-designed AI spaceship
	1978	Nation, Terry	<i>Blake’s 7</i> (Series 1)	Human-designed AI spaceship
	1979	O’Donnell, Kevin	<i>Mayflies</i>	Human-designed AI spaceship
	1979	Saberhagen, Fred	<i>Berserker Man</i>	Alien AI, hostile
	1979	Saberhagen, Fred	<i>Berserker Wars</i> (short story collection) <sup>110</sup>	Alien AI, hostile
	1979	Wise, Robert	<i>Star Trek: The Motion Picture</i>	A human brain in a probe
	1979	Nation, Terry	<i>Blake’s 7</i> (Series 2)	Human-designed AI spaceship
	1979	Herbert, Frank; Ransom Bill	<i>The Jesus Incident</i>	A human brain in a ship hull
	1980	Adams, Douglas	<i>The Restaurant At the End of the Universe</i>	Human-designed AI spaceships
	1980	Martin, George R.	“Nightflyers”	Human-designed AI spaceship
	1980	Nation, Terry	<i>Blake’s 7</i> (Series 3)	Human-designed AI spaceship

<sup>110</sup> In case of long series, like the Berserker Series, the Culture Series, the Xeelee Sequence, only the short stories preceding the first novel, fix-up or short story collection appear in the table as separate entries to reflect a more accurate estimate of the trope appearance fluctuation.

	1980	Heinlein, Robert A.	<i>The Number of the Beast</i>	Human-designed AI spaceship
	1980	Murakami, Jimmy T.; Corman, Roger	<i>Battle Beyond the Stars</i>	Human-designed AI spaceship
	1981	Saberhagen, Fred	<i>The Ultimate Enemy</i> (short story collection)	Alien AI, hostile
	1981	Nation, Terry	<i>Blake's 7</i> (Series 4)	Human-designed AI spaceship
	1982	Adams, Douglas	<i>Life, The Universe, and Everything</i>	Human-designed AI spaceships
	1982	Smith, Alexander D.	<i>Marathon</i>	Human-designed AI spaceship
	1983	Herbert, Frank; Ransom Bill	<i>The Lazarus Effect</i>	A human brain in a ship hull
	1984	Benford, Gregory	<i>Across the Sea of Suns</i>	Alien AI, hostile
	1984	Adams, Douglas	<i>So Long, and Thanks For All The Fish</i>	Human-designed AI spaceships
	1985	Saberhagen, Fred	<i>Berserker Throne</i>	Alien AI, hostile
	1985	Saberhagen, Fred	<i>Berserker Blue Death</i>	Alien AI, hostile
	1985	Saberhagen, Fred	<i>Berserker Base</i> (short story collection)	Alien AI, hostile
	1986	Adams, Douglas	<i>Young Zaphod Plays It Safe</i>	Human-designed AI spaceships
	1986	Laumer, Keith	<i>Rogue Bolo</i>	Human-designed AI spaceship
	1987	Banks, Iain M.	<i>Consider Phlebas</i>	Benign superintelligent AI spaceship
	1987	Benford, Gregory	<i>Great Sky River</i>	Alien AI, hostile
	1987	Saberhagen, Fred	<i>Berserker Attack</i> (short story collection)	Alien AI, hostile
	1987	Bear, Greg	<i>The Forge of God</i>	Alien AI, hostile
	1987	Niven, Larry	<i>Smoke Ring</i>	A digital copy of the human brain in a spaceship
	1988	Banks, Iain M.	<i>The Player of Games</i>	Benign superintelligent AI spaceship
	1988	Herbert, Frank; Ransom Bill	<i>The Ascension Factor</i>	A human brain in a ship hull

	1988	Smith, Alexander D.	<i>Rendezvous</i>	Human-designed AI spaceship
	1988	Kagan, Janet	<i>Hellspark</i>	Human-designed AI spaceship
	1988	Grant, Rob; Naylor, Doug	<i>Red Dwarf</i> – Series 1	Human-designed AI spaceship
	1988	Grant, Rob; Naylor, Doug	<i>Red Dwarf</i> – Series 2	Human-designed AI spaceship
	1989	Grant, Rob; Naylor, Doug	<i>Red Dwarf</i> – Series 3	Human-designed AI spaceship
	1989	Smith, Alexander D.	<i>Homecoming</i>	Human-designed AI spaceship
	1989	Benford, Gregory	<i>Tides of Light</i>	Alien AI, hostile
	1989	Stephen Baxter	“Blue Shift”	Alien spacefaring animal
	1989	Simmons, Dan	<i>Hyperion</i>	AI spaceship with organic elements
	1990	Roddenberry, Gene	<i>Star Trek: The New Generation</i> – Season 3	A human-machine spaceship
	1990	Williams, Walter Jon	<i>Angel Station</i>	Organic alien sentient spaceship
	1990	Simmons, Dan	<i>The Fall of Hyperion</i>	AI spaceship with organic elements
	1990	Laumer, Keith	<i>The Stars Must Wait</i>	Human-designed AI spaceship
	1990	Banks, Iain M.	<i>Use of Weapons</i>	Benign superintelligent AI spaceship
	1991	Saberhagen, Fred	<i>Berserker Lies</i> (short story collection)	Alien AI, hostile
	1991	Grant, Rob; Naylor, Doug	<i>Red Dwarf</i> – Series 4	Human-designed AI spaceship
	1991	Baxter, Stephen	<i>Timelike Infinity</i>	Alien spacefaring animal
	1991	Weber, David	<i>Mutineer’s Moon</i>	Alien AI spaceship
	1991	Banks, Iain M.	<i>The State Of Art</i> (short story collection)	Benign superintelligent AI spaceship
	1992	Grant, Rob; Naylor, Doug	<i>Red Dwarf</i> – Series 5	Human-designed AI spaceship
	1992	Adams, Douglas	<i>Mostly Harmless</i>	Human-designed AI spaceships
	1992	Weber, David	<i>In Fury Born</i>	Human-designed AI spaceship
	1992	Weber, David	<i>Path of the Fury</i>	Human-designed AI spaceship

Female, white	1992	McCaffrey, Anne, Ball, Margaret	<i>PartnerShip</i>	A rudimentary body in a ship
	1992	Bear, Greg	<i>Anvil of Stars</i>	Alien AI, hostile
Female, white	1992	McCaffrey, Anne; Lackey, Mercedes	<i>The Ship Who Searched</i>	A rudimentary body in a ship
	1993	Roddenberry, Gene	<i>Star Trek: The New Generation – Season 7</i>	A human-machine spaceship
	1993	Saberhagen, Fred	<i>Berserker Kill</i>	Alien AI, hostile
	1993	Grant, Rob; Naylor, Doug	<i>Red Dwarf – Series 6</i>	Human-designed AI spaceship
	1993	Baxter, Stephen	<i>Flux</i>	Alien spacefaring animal
	1993	Hopkins, Jack	<i>Satellite Night News</i>	Human-designed AI spaceship
	1993	Hopkins, Jack	<i>Satellite Night Special</i>	Human-designed AI spaceship
	1993	Weber, David	<i>The Armageddon Inheritance</i>	Alien AI spaceship
	1993	McCaffrey, Anne; S.M. Stirling	<i>The City Who Fought</i>	A rudimentary body in a ship
	1993	Laumer, Keith	<i>Honor of the Regiment: Bolos 1</i>	Human-designed AI spaceship
	1994	Laumer, Keith	<i>The Unconquerable: Bolos 2</i>	Human-designed AI spaceship
	1994	Hopkins, Jack	<i>Satellite Night Fever</i>	Human-designed AI spaceship
	1994	McCaffrey, Anne; Jody Lynn Nye	<i>The Ship Who Won</i>	A rudimentary body in a ship
	1994	Benford, Gregory	<i>Furious Gulf</i>	Alien AI, hostile
	1994	Baxter, Stephen	<i>Ring</i>	Alien spacefaring animal
	1995	Benford, Gregory	<i>Sailing Bright Eternity</i>	Alien AI, hostile
	1995	Laumer, Keith	<i>The Triumphant</i>	Human-designed AI spaceship
	1996	Hamilton, Peter F.	<i>The Reality Dysfunction</i>	
	1996	Berman, Rick; Piller Michael; Taylor Jeri	<i>Star Trek: The Voyager – Season 3</i>	Alien biotechnological modification of a human-designed ship
	1996	Weber, David	<i>Heirs of Empire</i>	Alien AI spaceship

	1996	Jody Lynn Nye	<i>The Ship Errant</i>	A rudimentary body in a ship
	1996	Simmons, Dan	<i>Endymion</i>	AI spaceship with organic elements
	1996	Saberhagen, Fred	<i>The Bad Machines</i>	Alien AI, hostile
	1996	Banks, Iain M.	<i>Excession</i>	Benign superintelligent AI spaceship
	1996	S.M. Stirling	<i>The Ship Avenged</i>	A rudimentary body in a ship
	1996	Hamilton, Peter F.	<i>The Reality Disfunction</i>	Human-designed organic spaceship
	1997	Hamilton, Peter F.	<i>The Neutronium Alchemist</i>	Human-designed organic spaceship
	1997	Grant, Rob; Naylor, Doug	<i>Red Dwarf – Series 7</i>	Human-designed AI spaceship
	1994	Laumer, Keith	<i>Last Stand: Bolos 4</i>	Human-designed AI spaceship
	1997	Keith, William H.	<i>Bolo Brigade</i>	Human-designed AI spaceship
	1997	Anderson, Paul S.W.	<i>Event Horizon</i>	Alien sentience taking over a human-designed spaceship
	1997	Paul Donovan, Lexx Gigeroff, Jeffrey Hirshfield	<i>Lexx – Season 1</i>	Human-designed alien organo-mechanical spaceship
	1997	Baxter, Stephen	<i>Vacuum Diagrams</i> (short story collection)	Alien spacefaring animal
	1997	Simmons, Dan	<i>The Rise of Endymion</i>	AI spaceship with organic elements
	1997	Saberhagen, Fred	<i>Berserker Fury</i>	Alien AI, hostile
	1998	Brin, David	<i>Heaven's Reach</i>	Organic spaceship
	1997	Paul Donovan, Lexx Gigeroff, Jeffrey Hirshfield	<i>Lexx – Season 2</i>	Human-designed alien organo-mechanical spaceship
	1998	Saberhagen, Fred	<i>Shiva in Steel</i>	Alien AI, hostile
Female, white	1999	Murphy, Pat	<i>There and Back Again</i>	Human-designed AI spaceship
Female, white	1999	Finch, Sheila	<i>Tiger in the Sky</i>	Human-designed AI spaceship
	1999	Hamilton, Peter F.	<i>The Naked God</i>	Human-designed organic spaceship
	1999	Grant, Rob; Naylor, Doug	<i>Red Dwarf – Series 8</i>	Human-designed AI spaceship

	1999	Rockne S. O'Bannon	<i>Farscape, Season 1</i>	Alien mechano-organic spaceship
	1999	Benford, Gregory	"A Hunger for the Infinite"	Alien AI, hostile
	1999	Applegate, Katherine	<i>Mutation</i>	Alien-designed AI spaceship
	2000	Robert Reed	<i>Marrow</i>	Alien designed spaceship
	2000	Grant, Rob	<i>Colony</i>	Human-designed AI spaceship
	2000	Berman, Rick; Piller Michael; Taylor Jeri	<i>Star Trek: The Voyager – Season 6</i>	Alien organic spaceship
	2000	Ringo, John	<i>A Hymn Before Battle</i>	Alien and human designed AI spaceships
	2000	Rockne S. O'Bannon	<i>Farscape, Season 2</i>	Alien mechano-organic spaceship
	2000	Banks, Iain M.	<i>Look to Windward</i>	Benign superintelligent AI spaceship
	2000	Reynolds, Alastair	<i>Revelation Space</i>	Human-designed AI spaceship
	2000	Paul Donovan, Lexx Gigeroff, Jeffrey Hirshfield	<i>Lexx – Season 3</i>	Human-designed alien organo-mechanical spaceship
	2000	Paul Donovan, Lexx Gigeroff, Jeffrey Hirshfield	<i>Lexx – Season 4</i>	Human-designed alien organo-mechanical spaceship
Female, white	2001	Applegate, Katherine	<i>The Mayflower Project</i>	Alien-designed AI spaceship
	2001	Applegate, Katherine	<i>Destination Unknown</i>	Alien-designed AI spaceship
	2001	Applegate, Katherine	<i>Them</i>	Alien-designed AI spaceship
	2001	Applegate, Katherine	<i>Nowhere Land</i>	Alien-designed AI spaceship
	2001	Keith, William H.	<i>Bolo Rising</i>	Human-designed AI spaceship
	2001	Keith, William H.	<i>Bolo Strike</i>	Human-designed AI spaceship
	2001	Fawcett, Bill	<i>Old Guard: Bolos Anthology 5</i>	Human-designed AI spaceship
	2001	Ringo, John	<i>Gust Front</i>	Alien and human designed AI spaceships
	2001	Asher, Neil	<i>Gridlinked</i>	Human-designed AI spaceship



	2001	Gardner, Alan James	<i>Ascending</i>	Human-machine spaceship
	2001	Rockne S. O'Bannon	<i>Farscape, Season 3</i>	Alien mechano-organic spaceship
	2002	Rockne S. O'Bannon	<i>Farscape, Season 4</i>	Alien mechano-organic spaceship
	2002	Ringo, John	<i>When the Devil Dances</i>	Alien and human designed AI spaceships
	2002	Applegate, Katherine	<i>Breakdown</i>	Alien-designed AI spaceship
	2002	Applegate, Katherine	<i>Isolation</i>	Alien-designed AI spaceship
	2002	Applegate, Katherine	<i>Mother, May I?</i>	Alien-designed AI spaceship
	2002	Applegate, Katherine	<i>No Place Like Home</i>	Alien-designed AI spaceship
	2002	Reynolds, Alastair	<i>Redemption Ark</i>	Human-designed AI spaceship
	2002	Jack McDevitt	<i>Chindi</i>	Alien AI spaceship
	2002	Laumer, Keith	<i>Cold Steel</i>	Human-designed AI spaceship
	2002	Adams, Douglas	<i>The Salmon of Doubt</i>	Human-designed AI spaceships
	2003	Asher, Neil	<i>The Line of Polity</i>	Human-designed AI spaceship
	2003	Berman, Rick; Braga, Brannon	<i>Star Trek: Enterprise – Season 3</i>	Fully mechanical alien spaceship
	2003	Stross, Charles	<i>Singularity Sky</i>	A digital copy of human brain in a spaceship
	2003	Applegate, Katherine	<i>Lost and Found</i>	Alien-designed AI spaceship
	2003	Applegate, Katherine	<i>Dream Storm</i>	Alien-designed AI spaceship
	2003	Applegate, Katherine	<i>Aftermath</i>	Alien-designed AI spaceship
	2003	Applegate, Katherine	<i>Survival</i>	Alien-designed AI spaceship
	2003	Applegate, Katherine	<i>Begin Again</i>	Alien-designed AI spaceship
	2002	Reynolds, Alastair	<i>Absolution Gap</i>	Human-designed AI spaceship
	2003	Ringo, John	<i>Hell's Fire</i>	Alien and human designed AI spaceships
	2003	Saberhagen, Fred	<i>Berserker's Star</i>	Alien AI, hostile
	2003	Saberhagen, Fred	<i>Berserker Prime</i>	Alien AI, hostile

	2004	Rockne S. O'Bannon	<i>Farscape, Miniseries</i>	Alien mechano-organic spaceship
	2004	Ringo, John	<i>Road To Damascus</i>	Human-designed AI spaceships
	2004	Hamilton, Peter F.	<i>Misspent Youth</i>	Alien organic spaceship
	2004	Robert Reed	<i>Mere</i>	Alien designed spaceship
	2004	Robert Reed	<i>The Well of Stars</i>	Alien designed spaceship
	2004	Wright, Brad; Cooper, Robert C.	<i>Stargate Atlantis – Season 1</i>	Organic alien spaceships
Female, POC	2004	Amberstone, Celu	“Refugees”	Alien AI, benign
	2004	Hamilton, Peter F.	<i>Pandora’s Star</i>	Alien organic spaceship
Female, white	2004	Ringo, John; Julie Cochrane	<i>Cally’s War</i>	Alien and human designed AI spaceships
	2004	Ringo, John; Williamson, Michael Z.	<i>The Hero</i>	Alien and human designed AI spaceships
	2005	Weber, David	<i>Bolo!</i>	Human-designed AI spaceships
	2005	Weber, David	<i>Old Soldiers</i>	Human-designed AI spaceships
	2005	Asher, Neil	<i>Brass Man</i>	Human-designed AI spaceship
	2005	Wright, Brad; Cooper, Robert C.	<i>Stargate Atlantis – Season 2</i>	Organic alien spaceships
	2005	Ringo, John; Kratman, Tom	<i>Watch on the Rhine</i>	Alien and human designed AI spaceships
	2005	Saberhagen, Fred	<i>Rogue Berserker</i>	Alien AI, hostile
	2005	Hamilton, Peter F.	<i>Judas Unchained</i>	Alien organic spaceship
	2006	Asher, Neil	<i>Polity Agent</i>	Human-designed AI spaceship
	2006	Baxter, Stephen	<i>Resplendent</i> (short story collection)	Alien spacefaring animal
	2006	Wright, Brad; Cooper, Robert C.	<i>Stargate Atlantis – Season 3</i>	Organic alien spaceships
	2006	Weber, David	<i>The Path of Fury</i>	Human-designed AI spaceship
	2006	Reynolds, Alastair	“Nightingale” in <i>Galactic North</i>	Human-designed AI spaceship

	2007	Danny Boyle	<i>Sunshine</i>	Human-designed AI spaceship
	2007	Wright, Brad; Cooper, Robert C.	<i>Stargate Atlantis – Season 4</i>	Organic alien spaceships
	2007	Asher, Neil	<i>Hilldiggers</i>	Human-designed AI spaceship
	2007	Ringo, John; Julie Cochrane	<i>Sister Time</i>	Alien and human designed AI spaceships
	2007	Ringo, John; Kratman, Tom	<i>Yellow Eyes</i>	Alien and human designed AI spaceships
	2007	Van Name, Mark L.	<i>One Jump Ahead</i>	Human-designed AI spaceship
	2008	Van Name, Mark L.	<i>Slanted Jack</i>	Human-designed AI spaceship
	2008	Wright, Brad; Cooper, Robert C.	<i>Stargate Atlantis – Season 5</i>	Organic alien spaceships
	2008	Asher, Neil	<i>Line War</i>	Human-designed AI spaceship
	2008	Banks, Iain M.	<i>Matter</i>	Benign superintelligent AI spaceship
Female, white	2008	Bear, Elizabeth; Monette, Sarah	“Boojum”	Alien spacefaring animal
	2009	Eoin Colfer	<i>And Another Thing</i>	Human-designed AI spaceships
	2009	Van Name, Mark L.	<i>Overthrowing Heaven</i>	Human-designed AI spaceship
	2009	Grant, Rob; Naylor, Doug	<i>Red Dwarf – Back to Earth</i>	Human-designed AI spaceship
	2009	Ringo, John; Julie Cochrane	<i>Honor of the Clan</i>	Alien and human designed AI spaceships
	2009	Ringo, John; Kratman, Tom	<i>The Tuloriad</i>	Alien and human designed AI spaceships
	2009	Ringo, John	<i>Eye of the Storm</i>	Alien and human designed AI spaceships
	2010	Bear, Greg	<i>Hull Zero Three</i>	Human-designed AI spaceship
	2010	Van Name, Mark L.	<i>Children No More</i>	Human-designed AI spaceship

	2010	Banks, Iain M.	<i>Surface Detail</i>	Benign superintelligent AI spaceship
Female, POC	2010	De Bodard Aliette	“The Shipmaker”	Analog-organic hybrid mind in a mechanical hull
	2011	De Bodard Aliette	“Shipbirth”	Analog-organic hybrid mind in a mechanical hull
Female, white	2011	Meyer, Marissa	<i>Cinder</i>	Human-designed AI in a ship hull
	2012	Robert Reed	<i>Eater-of-Bone and Other Novellas</i>	Alien designed spaceship
	2012	Grant, Rob; Naylor, Doug	<i>Red Dwarf – Series 10</i>	Human-designed AI spaceship
	2012	Van Name, Mark L.	<i>No Going Back</i>	Human-designed AI spaceship
	2012	De Bodard Aliette	“Starsong”	Analog-organic hybrid mind in a mechanical hull
	2012	De Bodard Aliette	“Immersion”	Analog-organic hybrid mind in a mechanical hull
	2012	De Bodard Aliette	“Scattered Along the River of Heaven”	Analog-organic hybrid mind in a mechanical hull
	2012	De Bodard Aliette	<i>On A Red Station, Drifting</i>	Analog-organic hybrid mind in a mechanical hull
	2012	De Bodard Aliette	“Ship’s Brother”	Analog-organic hybrid mind in a mechanical hull
	2012	De Bodard Aliette	“Two Sisters in Exile”	Analog-organic hybrid mind in a mechanical hull
	2012	Banks, Iain M.	<i>The Hydrogen Sonata</i>	Benign superintelligent AI spaceship
	2013	Robert Reed	<i>The Greatship</i>	Alien designed spaceship
	2013	Meyer, Marissa	<i>Scarlet</i>	Human-designed AI in a ship hull
Female, white	2013	Leckie, Ann	<i>Ancillary Justice</i>	Human-designed AI spaceship
	2013	De Bodard Aliette	“The Weight of a Blessing”	Analog-organic hybrid mind in a mechanical hull

	2013	De Bodard Aliette	“The Waiting Stars”	Analog-organic hybrid mind in a mechanical hull
	2014	De Bodard Aliette	“The Days Of War, As Red As Blood, As Dark As Bile”	Analog-organic hybrid mind in a mechanical hull
	2014	Robert Reed	<i>The Memory of Sky</i>	Alien designed spaceship
	2014	Meyer, Marissa	<i>Cress</i>	Human-designed AI in a ship hull
	2014	Leckie, Ann	“She Commands Me and I Obey”	Human-designed AI spaceship
	2014	Leckie, Ann	<i>Ancillary Sword</i>	Human-designed AI spaceship
	2014	De Bodard Aliette	“A Slow Unfurling of Truth”	Analog-organic hybrid mind in a mechanical hull
	2014	De Bodard Aliette	“The Forst of Jade Buds”	Analog-organic hybrid mind in a mechanical hull
	2015	Robinson, Kim Stanley	<i>Aurora</i>	Human-designed AI ship
	2015	Meyer, Marissa	<i>Winter</i>	Human-designed AI in a ship hull
	2015	Leckie, Ann	<i>Ancillary Mercy</i>	Human-designed AI spaceship
	2015	De Bodard Aliette	“Three Cups of Grief, By Starlight”	Analog-organic hybrid mind in a mechanical hull
	2015	De Bodard Aliette	“In Blue Lily’s Wake”	Analog-organic hybrid mind in a mechanical hull
	2015	Reeve, Phillip	<i>Railhead</i>	Fully mechanical space-travelling trains
	2015	Baxter, Stephen	<i>Xeelee: Endurance</i>	Alien spacefaring animal
Female, white	2015	Lovretta, Michelle	<i>Killjoys – Season 1</i>	Human-designed AI spaceship
Female, white	2015	Higgins, C.A.	<i>Lightless</i>	Human-designed AI spaceship
Female, white	2015	Diener, Michelle	<i>Dark Horse</i>	Human and alien designed AI spaceships
Female, white	2015	Dunstall, S.K.	<i>Linesman</i>	Alien-designed fully mechanical spaceship
	2015	Reeve, Philip	<i>Railhead</i>	Fully mechanical space-travelling trains
	2016	Grant, Rob; Naylor, Doug	<i>Red Dwarf – Series 11</i>	Human-designed AI spaceship

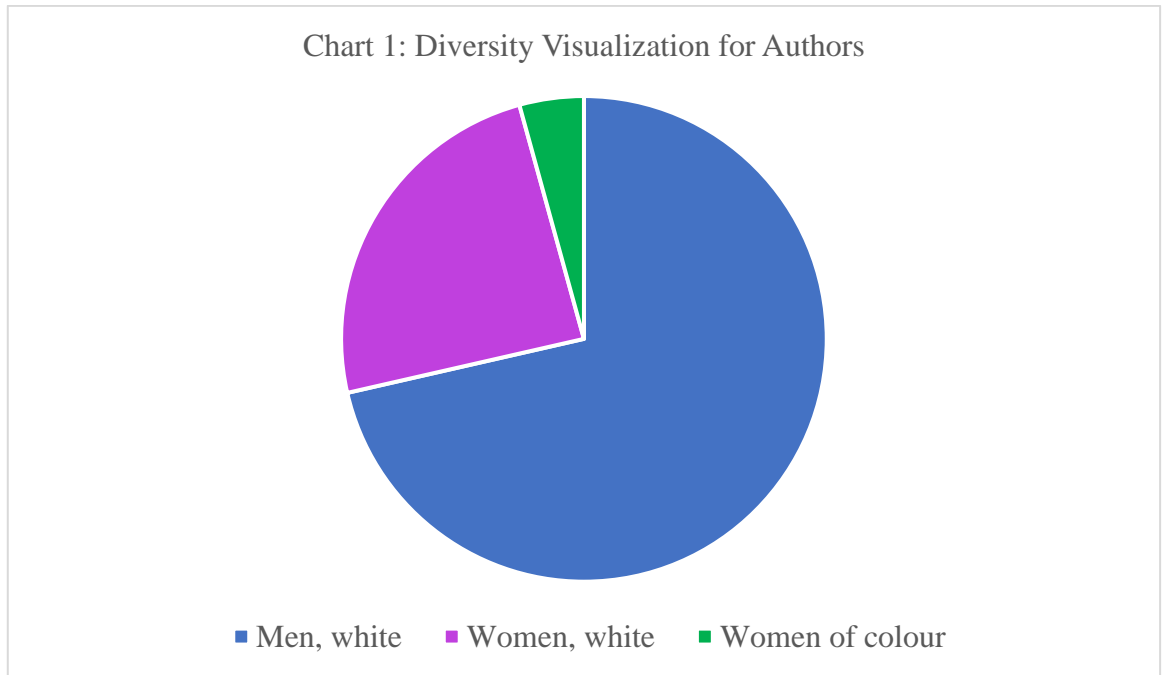
	2016	Higgins, C.A.	<i>Supernova</i>	Human-designed AI spaceship
	2016	Taylor, Dennis E.	<i>We are Legion, We are Bob</i>	Human-machine (copy of the brain)
	2016	De Bodard Aliette	“Memorials”	Analog-organic hybrid mind in a mechanical hull
	2016	De Bodard Aliette	“A Hundred and Seventy Storms”	Analog-organic hybrid mind in a mechanical hull
	2016	Lovretta, Michelle	<i>Killjoys – Season 2</i>	Human-designed AI spaceship
Female, POC	2016	Okorafor, Nnedi	<i>Binti</i>	Human-designed spacefaring animal
	2016	Dunstall, S.K.	<i>Alliance</i>	Alien-designed fully mechanical spaceship
	2016	Dunstall, S.K.	<i>Confluence</i>	Alien-designed fully mechanical spaceship
	2016	Diener, Michelle	<i>Dark Deeds</i>	Human and alien designed AI spaceships
	2016	Reeve, Philip	<i>Black Light Express</i>	Fully mechanical space-travelling trains
	2016	Diener, Michelle	<i>Dark Minds</i>	Human and alien designed AI spaceships
	2016	De Bodard Aliette	“Crossing the Midday Gate”	Analog-organic hybrid mind in a mechanical hull
	2016	De Bodard Aliette	“A Salvaging of Ghosts”	Analog-organic hybrid mind in a mechanical hull
	2016	De Bodard Aliette	“Pearl”	Analog-organic hybrid mind in a mechanical hull
Female, white	2016	Sønderby, Kaia	<i>Testing Pandora</i>	Human -designed AI sentient spaceship
	2017	Sønderby, Kaia	<i>Failure to Communicate</i>	Human -designed AI sentient spaceship
	2017	Grant, Rob; Naylor, Doug	<i>Red Dwarf – Series 12</i>	Human-designed AI spaceship
	2017	Okorafor, Nnedi	<i>Home</i>	Human-designed spacefaring animal
	2017	Lovretta, Michelle	<i>Killjoys – Season 3</i>	Human-designed AI spaceship
	2017	Higgins, C.A.	<i>Radiate</i>	Human-designed AI spaceship
	2017	Taylor, Dennis E.	<i>For We Are Many</i>	Human-machine (digital copy of the human brain)

	2017	Taylor, Dennis E.	<i>All These Worlds</i>	Human-machine (digital copy of the human brain)
Female, white	2017	Wells, Martha	<i>All Systems Red</i>	Human-designed AI spaceship
	2017	De Bodard Alette	<i>The Citadel of Weeping Pearls</i>	Analog-organic hybrid mind in a mechanical hull
	2017	Baxter, Stephen	<i>Xeelee: Redemption</i>	Alien spacefaring animal
	2018	Reeve, Philip	<i>Station Zero</i>	Fully mechanical space-travelling trains
	2018	Sønderby, Kaia	<i>Tone of Voice</i>	Human -designed AI sentient spaceship
	2018	Okorafor, Nnedi	<i>The Night Masquerade</i>	Human-designed spacefaring animal
	2018	Lovretta, Michelle	<i>Killjoys – Season 4</i>	Human-designed AI spaceship
	2018	Wells, Martha	<i>Artificial Condition</i>	Human-designed AI spaceship
	2018	Wells, Martha	<i>Rogue Protocol</i>	Human-designed AI spaceship
	2018	Wells, Martha	<i>Exit Strategy</i>	Human-designed AI spaceship
	2018	De Bodard, Alette	<i>Tea Master and the Detective</i>	Analog-organic hybrid mind in a mechanical hull
	2018	Baxter, Stephen	<i>Xeelee: Endurance</i>	Alien spacefaring animal
	2018	Powell, Gareth L.	<i>Embers of War</i>	Human-designed AI spaceship
	2019	Lovretta, Michelle	<i>Killjoys – Season 5</i>	Human-designed AI spaceship
Female, white	2019	O’Keefe, Megan E.	<i>Velocity Weapon</i>	Human-designed AI spaceship
	2019	Diener, Michelle	<i>Dark Matters</i>	Human and alien designed AI spaceships
	2019	De Bodard Alette	“The Dragon That Flew Out of the Sun”	Analog-organic hybrid mind in a mechanical hull
	2019	De Bodard Alette	“Rescue Party”	Analog-organic hybrid mind in a mechanical hull
	2019	Bear, Elizabeth	<i>Ancestral Night</i>	Human-designed AI spaceship
	2019	Powell, Gareth L.	<i>Fleet of Knives</i>	Human-designed AI spaceship
	2020	Diener, Michelle	<i>Dark Ambitions</i>	Human and alien designed AI spaceships

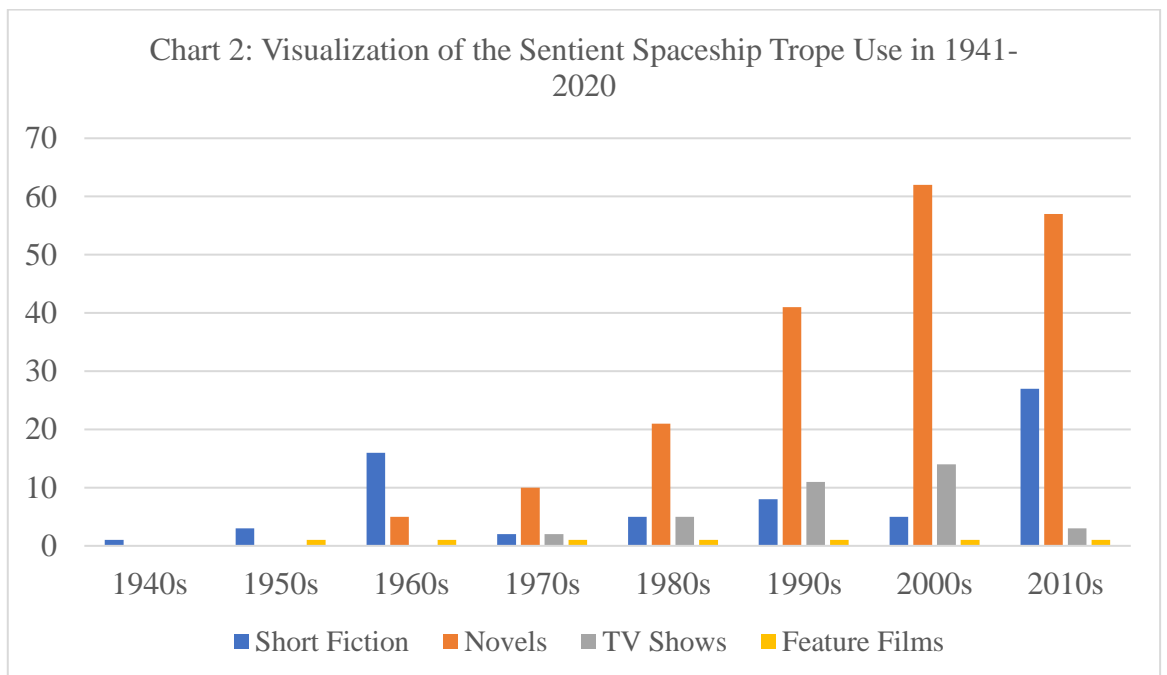
	2020	Bear, Elizabeth	<i>Machine</i>	Human-designed AI spaceship
	2020	De Bodard, Aliette	<i>Seven of Infinities</i>	Analog-organic hybrid mind in a mechanical hull
	2020	Taylor, Dennis E.	<i>Heave's River</i>	Human-machine (digital copy of the human brain)
	2020	Okorafor, Nnedi	"Sacred Fire"	Human-designed spacefaring animal
	2020	Wells, Martha	<i>Network Effect</i>	Human-designed AI spaceship
	2020	O'Keefe, Megan E.	<i>Chaos Vector</i>	Human-designed AI spaceship
	2020	Grant, Rob; Naylor, Doug	<i>Red Dwarf – The Promised Land</i>	Human-designed AI spaceship
	2020	Powell, Gareth L.	<i>Light of Impossible Stars</i>	Human-designed AI spaceship



**Chart 1:** Diversity Visualization for Authors (based on Table 1).



**Chart 2:** Visualization of the Sentient Spaceship Trope Use (based on Table 1).

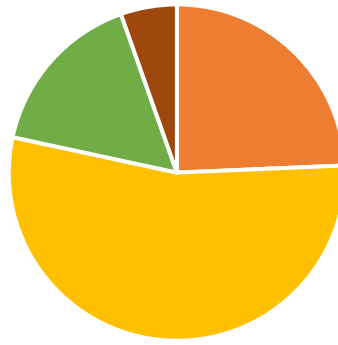


Notes:

1. Works published in 2020 are added to the 2010s column.
2. The data are taken from the Timeline table, which reflects the pool of works, which this dissertation used for selection.

**Chart 3:** Distribution of the Sentient Spaceship Combinations.

Chart 3: Distribution of the Sentient Spacehsip Combination.



- Human-Machine Combination
- Fully Mechanical Sentient Spaceships
- Organic Sentient Spaceships
- Other

## **Appendix B: Summaries of the Analysed Works**

### **Chapter 1**

#### **“Solar Plexus” (1941,1952)**

James Blish

Brant Kittinger, a scientist stationed alone on a free-floating observatory, is kidnapped by an unknown spaceship. Upon boarding it, he learns that the ship – the *Astrid* – is the result of Murray Bennett’s experiments. Murray Bennett, a renegade scientist, condemned for his attempts to connect a human brain to a spaceship, managed to finish his last project: he merged himself with the *Astrid*. In 1941 version, he abducts Kittinger to make him a part of his robot army to take revenge on the society that exiled him. In 1952 version, he needs Kittinger to explain his purpose, as he lost too much of himself through the connection to the machine. As Kittinger is unwilling to help him, the *Astrid*-Bennett decides to use him as a stock material for future human-machine spaceships. Kittinger, along with another captive, Lieutenant Powell, a UN military pilot, sever the connection between Bennett’s brain and the ship, thus killing Bennett and saving themselves from becoming cyborgs.

#### **The Brainship Series (1961-1999)**

##### ***The Ship Who Sang* (1969)**

Anne McCaffrey

Helva is a brilliant girl born with a disabled body, who becomes a shell-person and works as a courier spaceship, carrying out different missions for the medical department of Central Worlds. Central Worlds is a government-like organization running all the areas in space, colonized by humans.

As a brainship, Helva needs to work with a partner, called brawn. She chooses Jennan as her first brawn and falls in love with him. He dies, saving colonists from the exploding sun on one of their missions. Immediately after Jennan’s funeral, Helva is tasked to bring

Theoda, a physiotherapist, to a planet suffering from a galactic plague. Due to her technological enhancements, Helva can notice the miniscule movements of facial muscles on paralysed patients and helps Theoda prove that the consequences of the plague can be cured. Theoda is not her brawn but provides the company Helva needs to start her recovery from the grief.

Helva's next mission is to bring embryos to a planet where population suffered severe losses after a radiation flare. She is to collect embryos from several planets, accompanied by a temporary brawn – Kira. Kira lost her lover and has suicidal thoughts, but her suicide is prevented by the conditioning all humans, including shell-people, undergo. One of the planets promising to provide embryos turns out to be ruled by a rogue spaceship, who established a death cult there after the death of her brawn; and the promise to provide embryos is a trap set to capture Helva and destroy all the embryos they have already collected. Helva and Kira manage not only to avoid the trap, but also free people from the influence of the brainship maddened by grief by using a protest song sung by Helva's unique voice as a weapon. Faced with the destructive consequences of grief, both Helva and Kira progress in the recovery from their respective losses. In the end, Helva also proposes a way for Kira to have her lover's child, even though neither Kira, nor her lover provided their genetic material for political reasons.

The next mission brings Helva to Beta Corvi, a planet inhabited by the Corviki, an alien species, existing in a methane atmosphere. Helva brings a theatrical troupe of best human actors to perform *Romeo and Juliet* to the Corviki in exchange for the design of an ultra-fast engine. The lead actor of the troupe is Solar Prane who suffers from low bone density and is accompanied by his nurse – Kurla. In this mission Helva is paired with Chadress, a retired brawn, returning especially for this mission. To be on Beta Corvi, all actors, Chadress and Helva needs to transfer their consciousness into a gaseous envelope, which Helva and able-bodied humans do not enjoy, but ageing Chadress and dying Prane

find exceptionally pleasant. The performance is a huge success, harbouring a promise to awaken dormant energies on Beta Corvi. Prane, Kurla, and Chadress decide to remain in the Corviki envelopes, leaving their human bodies behind. The Corviki delight with the performance makes the rest of the troupe and Helva extremely uncomfortable, as such a close contact to raging energies threatens their mental integrity. Traumatized, they flee to their human bodies, but manage to get the formula for the engine. Niall Parollan, a person responsible for assigning missions to Helva in Central Worlds, makes his first appearance in the dramatic mission.

After dramatic mission, Helva decides to settle with a new permanent brawn and chooses Teron, mainly because he is very different from Jennan. On one of the routine runs, Helva and Teron encounter a gang of drug runners, who manage to capture them because Teron blindly follows the protocol, without analytically questioning the situation. Due to her experience of the Corviki embodiment, Helva can cope with the experience of sense deprivation, to which she is subjected by her captors. She is disconnected from her ship body by Xixon, the leader of drug runners, who was previously trained as a brawn but got expelled. Xixon, intrigued by Helva's fame as "the ship who sings," orders her to sing. Using her ingenuity Helva pools huge power to produce a sound and sings an enticing song, luring drug runners closer to her. She kills them with her powerful voice and thus rescues four more braiships and their brawns captured before. Returning to her home base, Helva gets improved security for her titanium columns, banishes Teron, and asks Niall to become her brawn. Due to her successful work, she repays the debt to Central Worlds for the surgical operation connecting her to the shell and maintenance cost of her mechanical body, as well as the fine for banishing Teron. Niall and Helva are in love and are ready to take a new mission – to go back to Beta Corvi and try to fix the ultra-fast engines that do not work properly.

### **"Honeymoon" (1977)**

Anne McCaffrey

Before setting off to Beta Corvi, Niall and Helva host a party, where Helva feels jealous because Niall pays attention to unmodified women. Niall assures Helva that he can have his sexual desire in check, both directed at her and other women. Niall has Helva's release word, which makes his desire for her dangerous – opening a titanium column implies a traumatic experience of sense deprivation or death. Reaching Beta Corvi and transferring their consciousness to the envelope embodiment, Niall and Helva negotiate with the Corviki, and get the necessary information to fix the problem of the exploding engines. The Corviki feel Helva and Niall's mutual attraction and push them together, which distresses Helva, who does not want to merge completely with Niall. On the contrary, Niall welcomes this surrogate for sex. The explosion of energy between them leads to a blackout, after which they awaken in their respective bodies, but Helva retains an ability to share sensations with Niall, like feel the taste of coffee.

### ***The Ship Who Searched (1992)***

Anne McCaffrey and Mercedes Lackey

Tia is a daughter of archaeologists who are stationed on a remote planet with traces of alien civilization. As they are busy with their research, seven-year-old Tia spends a lot of time in the protected dome with an AI, minding her. As a result of an accident, she contracts a disease trapped in the ancient alien ruins, the progression of which passes unnoticed by the home AI. When her parents return and see Tia's condition, it is too late for the treatment: Tia will be paralysed for life.

Due to her brilliance and flexibility, Tia becomes a shell-person. Even though the general practice to connect the child to the shell in infancy, an exception is made for Tia, who successfully adapts to her new shell embodiment, passes exams, and becomes a courier brainship. Her brawn, Alex, shares her interest in archaeology, which becomes a reason for their friendship and growing affection.

Lackey's variation of the Brainship universe includes military brainships and weapons, unlike McCaffrey's novel and short stories. Both Alex and Tia regret not having weapons on courier ships, as they need to protect themselves from smugglers. They manage to get weapon to protect themselves, which can be used pending permission from Central Worlds. Alex and Tia run into several cases of mysterious alien cargo appearing on human stations. Sometimes the cargo proves dangerous causing diseases, which can be overlooked by AI and threaten human population. Following the traces of these mysterious cargoes, Alex and Tia uncover a smuggler organization, bringing potentially dangerous artefacts from alien settlements, and participate in the operation to bring them down.

Tia, like Helva, repays the debt with Central Worlds for her operation early, brilliantly executing many missions and making wise investments. She also invests into the research resulting in creation a proxy body for her, which allows her to have tactile sensations and sex with Alex. They also get an opportunity to work with researching the secret of the civilization, through the ruins of which Tia contracted the virus, following their passion for archaeology.

### **“The Ship That Returned” (1999)**

Anne McCaffrey

Helva and Niall are on their last mission, as Niall is dying from old age, while Helva has a long life ahead of her. They are attacked by galactic scavengers but manage to use cloaking defensive technology, firmly believing that a courier spaceship does not need a weapon. They not only escape the danger, but also uncover scavengers' home base and inform Central Worlds. Helva, losing Niall, reminisces on the time they spent together, including his unchanging desire for her to try on a different body, which Helva consistently resists. The short story closes the series and pays tribute to all other novels, written with co-authors and by other authors working in the universe of the series, by mentioning all protagonists, including Tia, the sponsor of the synthetic body, which Helva refused to try.

### **“Starcrossed” (1973)**

George Zebrowski

The MOB – modified organic brain – is a composite human brain, governing a space probe. The probe is intended to make a contact with alien civilizations and is sent to a faraway solar system. During the long journey, the MOB is mostly dormant, with a part running routine operations fully awake all the time. Approaching the destination, the whole MOB is awakened, but encounters a malfunction, which causes a split of the whole composite brain into two parts – the male artificially grown part and a part taken from a woman. The woman, remembering her past embodiment, yearns for sexual contact and seduces the male part, using hallucinogenic chemicals. Distracted by the imagined intercourse, both parts miss their approach to a star and die burnt by its heat, unable to divert the course of their flight.

### **The Universe of Xuya Series (2007-present)**

Aliette de Bodard

### **“Shipmaker” (2010)**

Dac Kien is a Dai Viet engineer living in the Empire of Xuya, China in the alternative timeline of the series. Dac Kien left Dai Viet refusing to meet the expectations of her family, who wanted her to marry and give birth to children. In the Empire of Xuya, she lives with her wife who has recently delivered a baby. Dac Kien is building a ship body for a mind due to be born soon, contemplating the principles of construction that the Empire of Xuya and Dai Viet share, and which Easterners and Mexica do not understand. Dac Kien is visited by the mindbearer, a Mexica woman, for whom bearing a mind is both an honour due to her Mexican background, and a way to get benefits in the Xuyan society. Mexica considers the birth of a mind an honourable duty for women, chosen for it, while Xuya promises monetary reward and better prospects in marriage to those who take a risk to bear a mind. The



mindbearer goes into labour earlier than expected, when the ship body is not ready, and the connection fails.

### **“Shipbirth” (2011)**

Acoimi, a Mexica transgender man, who transitioned for fear of being made to give birth to a ship’s mind, is a medical professional sent to examine a woman who just gave birth to a mind. The woman proves unresponsive, having lost her mind giving birth to her modified child, and the mind failed to connect to the mechanical body. About to perform his duties of ending the woman’s life, he glimpses a response in her. She sings and goes to the heartroom of the ship, which proves to be a residual reaction rather than a recovery of sanity. However, this last action brings Acoimi to the heartroom, where he manages to help the mind to finalise the connection with the ship, resorting to his guiding parental energy. The mother of the mind dies in the process. But her child survives and becomes a mindship.

### **“Ship’s Brother” (2012)**

A Dai Viet woman, a mother of a human son and a mindship daughter, contemplates the reasons for the conflict between her children, tracing it to the moment of the mind’s birth, which her son had to witness, as her husband was away on business, and she didn’t have anybody to mind the child. The highly difficult and bloody process of delivering the mind traumatizes the child and debilitates the mother. Her son never accepted *The Fisherman’s Song*/Mi Nuong, his sister to be a part of the family, while she didn’t harbour any resentment towards him. Going to visit *The Fisherman’s Song*/Mi Nuong, when she is back from one of her trips, the whole family runs into a woman who had given birth to a mind and lost her sanity in the process. The mother of the children is distressed by the sight, and her husband tries to pacify her, while the son gets angry and insults his sister when they arrive on board. After the quarrel, the son takes an Easterner ship, not quickened by a mind and travelling so slowly that their passengers need to hibernate, to flee from his family. He makes a career

outside of Dai Viet, but his mother envisions his return, even though she will have been long dead by then. And upon coming back he will find his sister waiting and ready to forgive him.

### **“The Waiting Stars” (2014)**

Lan Nhen, her cousin Cuc, and her great-great aunt *The Cinnabar Mansions*, a mindship, are searching for *The Turtle’s Citadel*, her great aunt, in a place where the Outsiders store the damaged and captured ship bodies of mindships. Locating *The Turtle’s Citadel*, Lan Nhen takes *The Cinnabar Mansions’* pod to board it, following Cuc’s directions to avoid the security measures, installed by the Outsiders. Examining *The Turtle’s Citadel*, Lan Nhen finds the Outsiders’ equipment transferring huge amounts of data, connected directly to the mindship’s organic part. The equipment broadcasts *The Turtle’s Citadel’s* consciousness to a human body on Prime, central planet of the Outsiders. *The Turtle’s Citadel* with her memories erased lives in a body of Catherine, thinking that she along with other Dai Viet girls was rescued by an Outsiders’ religious order from the destiny to become a mindbearer. Growing with her human body, she feels uncomfortable in it and applies to get a profession connected with space travel, which the Outsiders’ government rejects. Most of children in the same institution commit suicides, but Catherine survives and marries an Outsider man, though always feeling alienation towards her life. When the signal from Lan Nhen’s attempts to disrupt the broadcast reaches her, Catherine/*The Turtle’s Citadel* regains her memories and does not hesitate to leave this life behind, returning to her family. With Cuc’s help, Lan Nhen disconnects the equipment, awakening *The Turtle’s Citadel*, and they escape.

### ***The Tea Master and the Detective* (2017)**

*The Shadow’s Child* is a traumatized shipmind, who gets trapped in deep space during an uprising in Dai Viet, with all her crew dead and rescue not coming on time. Afraid to travel in deep space after that, she cannot take usual occupations of mindships retired from the Imperial service, like transportation of cargoes and passengers. Instead, she creates

individual brews to make travelling in deep space easier for humans. The space/time distortion in deep space travel is difficult for human perception, which sometimes leads to madness, so brews are recommended for these flights. However, she barely makes ends meet, with ready-made brews used by the majority.

Long Chau was a prestigious teacher from a renowned family, but one of her students went missing and she was implicated in this by receiving a big sum of money right after the student's disappearance. She did assist in the student's disappearance, but it was the student's desire to escape from the family's expectation and prescribed profession and marriage. The truth about it, however, never becomes known either to the city magistrate, functioning as police, or the student's family, as Long Chau manages to resist the magistrate questioning techniques. It ruins Long Chau's reputation, but she does not need to work with the money received from the grateful student. She takes it upon herself to investigate the cases that the magistrate will likely close without finding out the truth, knowing from first-hand experience how inefficient the institution can be.

Researching the degradation of corpses in deep spaces, Long Chau comes to *The Shadow's Child* with a special request – to prepare a brew that will not tranquilize her but keep her awake and sharp during a deep-space trip. *The Shadow's Child* financial situation is dire, so despite her doubts – both medical and personal, she accepts the order and even takes Long Chau to deep spaces to observe her reaction to the brew. In deep space, they travel to a mindship who died in deep spaces with all passengers aboard, where Long Chau finds an unusual corpse. She invites *The Shadow's Child* to join the investigation, which brings them to uncover a scheme of intimidation, used by a leader of a workers' commune, to keep the members docile. Hiring a mindship, the leader brings dissenting members into deep spaces and leaves them there without any protection – usually people in deep spaces not only use brews to calm down, but also wear special suits that prevent deep space from affecting their bodies. The corpse found by Long Chau is an intimidation attempt gone wrong

– the person left in deep space has an unexpected reaction and dies. Long Chau and *The Shadow's Child* report it to the city magistrate, protecting other members of the commune.

Long Chau tells the truth about her missing student to *The Shadow's Child*, which enhances their mutual trust and paves the way for future cooperation in investigating crimes.

### ***Seven of Infinities (2020)***

Vân is a poor engineer who designs an implant assembled out of other people's ancestors' corrupted memory implants. Ancestor's memory implant is a sign of good family background, storing memories of scholarship of a family member that can be used when passing the state civil service exam. Vân uses her implant to pass the exam, becomes a scholar, and a secretary of a poetry club. Her use of this implant is not illegal, but threatens her reputation and position, as it is not her ancestor who is implanted in her head, it is a composite of the failed attempts to create an ancestor implant, a collection of different personalities who are not related to Vân. If anybody discovers the origin of her implant, she will lose her jobs. Vân resides with Uyên, a student she is training for the state exam, and losing this job implies not only loss of income, but also accommodation.

*The Wild Orchid in Sunless Woods*, a mindship, was a successful thief, stealing from the rich and performing several big heists, after which she and her team decided to lie low and lead a quiet law-abiding life. *Sunless Woods* pretends to be a scholar, a descendant of a rich family, and takes a high-ranking position in the poetry club where Vân is a secretary. *Sunless Woods* has a genuine sympathy towards Vân, and when the poetry club wants to fire her because of her low background, she comes to visit and warn her.

Simultaneously with *Sunless Woods*' visit, Uyên has a mysterious visitor who claims to sell a cheat for the exam. Uyên let the visitor in not knowing who it is and is stalling for time trying to figure out how to avoid a reputational blow, as even being seen with people selling cheats before the exam can ruin her already precarious position. Only one of her mothers made a military career during the uprisings, while the other is very small merchant,

barely able to afford a tutor for the exam. The visitor, however, is not connected with exam, she uses it as a ruse to get into Uyên's family compartment, which used to belong to an artist and architect famous for leaving puzzles in her artwork. The visitor believes that she and her companions can steal the treasure that the architect presumably hid in one of her pieces. Opening the safe, hidden under overlays the visitor unexpectedly dies from the pain-inducing agents revealing her background as an escaped criminal.

Finding themselves with a corpse in their compartment, Vân and Uyên try to find a way out of this highly dangerous situation, where both their reputations and lives are in danger. *Sunless Woods* decides to help Vân, both because she likes her and because the mystery behind the artwork puzzles stirs her adventurous streak. They follow the trail of mystery to a dead mindship, a son of the architect. He died stuck in deep space. Vân and *Sunless Woods* find another fresh corpse, now a descendant of the architect, on board the dead mindship, but no treasure.

In the meantime, Vân recognizes the first corpse. The woman was a close friend of hers, who followed a criminal path trying to escape poverty. She realizes that the murderer of the second corpse is another close friend of her youth, as both were condemned for theft and sent off to faraway mining colonies. She feels guilty before them, as she was considered the oldest of the group and when the other two were caught, she was supposed to take the blame, following the logic of Dai Viet society, even though she did not participate in the crime. Vân's friends, however, did not reveal their connection and Vân managed to finish her project and pass the exam.

Vân agrees to meet the remaining friend, who realised that Vân managed to create the composite implant and intends to steal and sell it, even though it means that Vân can die or get irreversibly damaged in the process of the implant extraction. *Sunless Woods* and Uyên independently come to save Vân and succeed. *Sunless Woods* and Vân, who become

romantically involved during their investigation, decide to try to continue their relations even though they started based on lies about each other's background.

### **Imperial Radch Trilogy (2013-2015)**

Ann Leckie

#### ***Ancillary Justice* (2013)**

Breq is the last ancillary of the destroyed Radch spaceship *Justice of Toren*. *Justice of Toren* was a troop carrier of the Radch Empire, stationed near the last planet the Radch colonized. The Radch colonization was stopped by the Treaty with the Presger, an alien species, far more technologically advanced than the Radch. The Treaty states that Significant species must not attack or damage each other. If humanity, represented by the Radch, wants to be recognized as a Significant species they are to stop colonization and most importantly stop turning people into ancillaries, human bodies connected to the Radch spaceships with memories and personalities replaced by the ship's AI. The Presger demonstrated their technological expertise, equipping Gerentate, one of the planets that Radch was going to colonize, with guns invisible to the Radch Security systems and capable of breaking the Radch armour and destroying the Radch spaceships. It didn't prevent the planet's annihilation ordered by Anaander Mianaai, but it caused a split in his personality.

Mianaai is the Lord of the Radch, a multi-body entity of clones of the same person, who share their memories through the implants. The distance that the data travels in the vast distances of the Radch makes the split possible and later aggravates it, causing more factions to appear. The main disagreement between the factions is the Treaty with the Presger. One faction seeing the Treaty as the only way for humanity to survive, stops colonization and introduces measures intended for liberalization of the Radch society. The other thinks that the empire and constant expansion is the only way that Radch can exist, and the Treaty is a result of a conspiracy and the Presger influence. However, the factions cannot have an open conflict, as it will balkanize the Radch society, so Mianaai conceals the split from himself,

let alone people in the Empire. The factions secretly compete to secure the support of the Radchaai, and changing access codes to the space stations and AI spaceship so that they obey a specific faction rather than the whole entity of Mianaai.

One of the factions visits *Justice of Toren*, finding it already recruited by the other. He orders to execute Lieutenant Awn, the favourite of One Esk decade, a twenty ancillary unit of a Radch troop carrier. *Justice of Toren* follows the order, but then kills one instance of Mianaai, showing where her loyalties lie. Another instance of Mianaai breaches *Justice of Toren's* heat shield, killing both the ship and all the human on board. *Justice of Toren* manages to send out one ancillary, One Esk Nineteen, to inform the other faction of what happened. One Esk Nineteen, however, does not follow the order, developing a personality of her own, and attempting to end Mianaai's tyranny by exposing the split.

One Esk Nineteen, taking Breq as her name, goes to Nilt to retrieve the lost Presger gun to kill one instance of Mianaai to publicly expose the split. On Nilt, she finds Seivarden, a former Lieutenant of *Justice of Toren*, who became a drug addict after spending two hundred years in a suspension pod. His ship was destroyed by a Presger gun at Gerentate, but the ship managed to save Seivarden, her captain, putting him into a suspension pod. Breq picks up Seivarden, even though she disliked him as *Justice of Toren's* lieutenant, and travels to find the gun. After getting the gun, she goes back to Radch and executes her plan. However, instead of killing her, Mianaai considers her an asset and sends her as a Fleet Captain to a system where Lieutenant Awn's sister lives and works. Breq becomes a captain of *Mercy of Kalr*, a small ship crewed with humans. Initially unwilling to serve the tyrant, Breq agrees to keep an eye on the sister of the person she loved. In the fighting arising after the assassination, Seivarden pledges his loyalty to Breq and becomes one of Lieutenants on *Mercy of Kalr*.

### *Ancillary Sword (2014)*

The Athoek station, where Basnaaid, Lieutenant Awn's sister, lives, has a social conflict that Breq, endowed with her power tries to resolve. She uncovers illegal residents on the station, who are not of the dominant ethnic group as other population of station and the planet. A Presger translator present on the station gets killed in the area where illegal residents live, and to ritually mourn her, Breq goes down to the planet and learns about the mistreatment of workers on tea plantations, tea being the main export of the Athoek system. Trying to negotiate the position of the illegal residents on the station and change the conditions of workers, Breq gets deeply involved into the politics of the Athoek system. Politics also attracts Lieutenant Tisarwat, who is assigned to Breq's ship immediately before the departure to the Athoek system.

Miannai implanted his personality to Tisarwat to spy on Breq, but her body was rejecting the implants. Breq notices Tisarwat's condition and disconnects implants. The disconnection of implants does not lead to restoring previous personality and Tisarwat suffers from a deep trauma from this tampering with her mind. Breq tries to help her and eventually Tisarwat falls in love with Basnaaid and attempts to participate in the politics of the station revealing her residual connection with Mianaai's personality.

Breq also finds out about a scheme of illegal trading of people in suspension pods, which makes her an enemy of a locally stationed captain. The captain realizing that Breq is investigating his dealings with the Ghost system, selling suspended people. The Ghost gate is the only gate out of the Athoek System. The Captain tries to shoot and injures Breq in the station's gardens, when the dome of the garden is destroyed by a falling shuttle. A fraction of Mianaai, who killed *Justice of Toren* sends its instances to the Athoek system, and inadvertently rams into a passenger shuttle travelling from the planet to station, killing all people aboard and sending it to crash into the station's dome. *Mercy of Kalr* picks up Breq,



Tisarwat and Basnaaid, floating out of the broken dome, and the crew learns that Breq is an ancillary, which, however, does not change their attitude to her.

### ***Ancillary Mercy (2015)***

The Presger send a new translator to replace the one that was killed, and it finds Breq as a very interesting person and follows her around going down to the planet to attend the court proceedings over a worker from tea plantations. The translator also meets an ancillary of an AI spaceship hiding in the Ghost system who Breq picks up, deducing that the ship is not Radch, but Notai. Notai were a part of the Radch civilization but rebelled against Mianaai's authority before the large-scale Radch expansion.

The Athoek station is resentful towards its current authorities as it wants all its residents to be secure and content, including the illegal ones. Mianaai's breaking the dome and causing disruption angers it even more, making it sympathetic to Breq's cause to help both illegal residents and workers on tea plantations. The faction of Mianaai that killed *Justice of Toren* wants to execute Breq and subjugate the station into obedience by using its access codes. Tisarwat, accessing her knowledge on access codes, frees the Athoek station and *Mercy of Kalr* from Mianaai's control, letting them choose their allegiance.

Pooling their efforts together, Breq, the Notai spaceship, *Mercy of Kalr* and the station manage to resist Mianaai. Breq declares AIs a separate species and the Athoek system an independent republic to the Presger translator, thus stalling Mianaai's attempts to bring it under his control. Mianaai tries to kill Presger translator with the Presger gun, which does not work. The Presger translator goes to inform the Presger conclave about a new possible significant species, and Mianaai is forced to leave the Athoek system. The freed AIs and humans of the Republic of Two Systems start discussing how they are going to organize governance on their independent territory.

## **Chapter 2**

### **“Specialist” (1953)**

Robert Sheckley

An alien spaceship travelling on a usual trading route is caught in a photon storm, which causes death of a Pusher, a member of the team and a crucial organ of the spaceship. The alien spaceship is a composite entity which consists of living specimens of different alien species. These alien species have a body shape and characteristics that reflect the function these species perform in space travelling and navigation; for instance, Walls have flat bodies covering big areas and can withstand the impact of radiation, light, and extreme temperatures of outer space; the Talker has a spider-like body connecting all the parts of the spaceship and provides for the communication between the different species. The Pusher the ship loses in the photon storm quickens the ship to the speeds making intersystem, Universe-wide travel feasible. Having lost the Pusher and being thrown off from major trading routes, the alien spaceship needs to find a pusher planet, otherwise by the time it returns to the normal routes almost all the parts of the ship will be dead. They find a planet of Pushers, Earth. They abduct an U.S. soldier on furlough camping on the seaside. They explain to him their dire situation. The soldier, initially horrified by their alien appearances and the fact of abduction, eventually decides to save them, joining the universal community of space-faring species.

### **The Xeelee Sequence (1987-2018)**

Stephen Baxter

### **“The Blue Shift” (1989)**

Jim Bolder, an ace human pilot, is hired by the Qax, an alien species that colonized Earth, to fly and explore the capacities of a Xeelee spaceship that the Qax managed to procure and now aspire to turn into an asset in the galactic species trade and competition. Bolder agrees and is brought to the Qax native planet to take up his mission on a Spline,

contracted to the Qax. On the planet, the human ambassador to the Qax explains to Bolder that the Qax are a species with huge bodies heavily dependent on their native environment; they even have to exclusively use the Spline for space travel because only the Spline have the capacity to create the environment identical to the Qax's native planet in their bodies and preserve it, sustaining the Qax survival in the interstellar travel. Bolder boards the Xeelee spaceship, and following the Qax's instruction sees that the Xeelee, an alien species so highly technologically advanced that they hardly notice other alien species around them, are building some huge cosmic donut-shaped object in the centre of the galaxy. Getting to know the capacity and characteristics of the spaceship, Bolder destroys the Qax's home planet, freeing humanity from the colonial rule and annihilating the whole alien species of the Qax.

### ***Timelike Infinity (1992)***

Michael Poole is a member of the group of scientists who created the way to travel into the future with the help of a warp technology. After the success of the project, with all its participants travelling to the future, Poole is stationed on a faraway station in his timeline, continuing his observation and reluctant to participate in either science or politics. Miriam Berg, Poole's colleague, who went to the future, is disappointed by what she sees there. The Earth is colonized by the Qax, and the only resistance is a sect hiding a construction of a singularity weapon in a piece of earth containing the Stonehenge which they took to Jupiter's orbit. This piece of Earth is protected by the Qax's law as cultural heritage. Humans in the sect have a poor health and live in utterly ascetic conditions, which partially is predetermined by the Qax policies, limiting human's access to medical technologies, and partially by their religious beliefs. Their goal is to collect singularities and fire them all at once to create the end of time, hoping that the "universal observer" will see them in the place of apocalypse and makes them the chosen people.

The Qax, using the gate themselves to travel to the future, learn that Bolder will annihilate their species. The Qax governor of Earth decides to take two military Splines and

go to the past to destroy humanity before humans made any contact with alien species. Taking a human ambassador to the Qax, the governor travels to the past to do that. Miriam, who returns to the past with the cult, and Poole discuss a plan of destroying the two Spline. Miriam stays with the cult and uses their weapons, while Poole rams his ship into the Spline carrying the governor. The ambassador to the Qax helps Poole and explains to him the future situation. They manage to kill the Spline they are both riding. The ramming of the ship causes a time-space discontinuity, and Poole on the dying Spline is sucked into it, drifting to the centre and future of the galaxy. In this journey, he becomes a disembodied entity, a higher mind and sees the heat death of the galaxy which for an unknown reason comes much earlier than it should. He also sees that the Xeelee are trying to leave this galaxy, escaping its death, and concludes that the Xeelee and this engineering projects must be the reason for the shorter lifespan of the galaxy.

### **“Breeding Ground” (2003)**

During a battle, a Spline contracted to humans gets seriously injured, and thinks that all the human onboard are dead. Considering the contract fulfilled, the Spline returns to its home planet. However, some of humans remain on the Spline, walking in the Spline’s vessel, and trying to find a way to connect to the Spline and direct it where they need to go. In the partially hostile environment of the Spline’s body, most of these humans die, including the “wetback,” the only person who has a skill to work with the neural interface that allows humans interact with the Spline. The two survivors are a soldier and a scientist. The scientist explains where the Spline goes and the significance of it for the Spline-human relations. He is saddened by implications of the enslavement of a free sentient species but chooses to transfer the information to other humans anyway. The scientist and the soldier use a Squeem transmitter, a tiny alien fish, a specimen of the species who were the first species to colonize Earth and are now used by humans as a living piece of technology. Both humans die, but the

Squeem, sends a signal to the united humanity who find the breeding ground and take control over it, ending the free Spline.

### **“The Great Game” (2003)**

Lieutenant Neer with his marines arrives to a planet colonized by humans where the volcanic activity suddenly drastically increased, threatening the human settlements. At the same time, the star of this solar system is experiencing anomalies connected with dark matter. Approaching the planet, the marines they see a throng of the Xeelee warships. They are joined by Admiral Kard and Commissioner Xera, a scientist and a representative of the civilian powers.

The task of the marines is to evacuate the colonists, but outside the protection dome they find another unprotected settlement founded by people who do not want to live with the rest of colonists to be closer to natural conditions. The eruption starts and the marines try to save as many people as they can including Tilo, an academician who is researching the volcanic activity on the planet. The results of his research cannot state whether the volcanic activity is caused by the Xeelee, even though it is not typical for them to be outside the Galactic Core, where they build their mysterious project.

Kard wants to present the case of the planet as the Xeelee’s attack on humans to start the war, just presenting the Commission with the pictures of the Xeelee fleet over the planet and images of people dying in the eruption. Xera condemns his move but cannot act against him. Tilo presents a hypothesis that the Xeelee are in the system not for humans but for the anomalies in the star that seems to house “photino birds,” who use stars as their breeding ground destroying them in the process. As a baryonic – light matter form of life, the Xeelee want to prevent the destruction of the stars and are at war with the photino birds, who are very difficult to kill. Kard ignores this hypothesis and presses on with the war plans.

The official war between humans and the Xeelee is declared due to this accident. Neer welcomes the clarity of war and the presence of the concrete enemy preventing the

humans from taking over the Galaxy. Despite it, the short afterword makes it clear that this accident for the Xeelee is a part of their conflict with photino birds, and they did not intent to fight with humans, following their pattern of indifference to them.

### **Xeelee: Redemption (2018)**

The last two novels of the series offer an alternative timeline, where the Xeelee come to the Solar System to attack and destroy Earth. Michael Poole, receiving his diaries and archives from the alternative timeline, prevents it by moving the planet to the outskirts of the solar system, which makes it freeze, limiting time when Michael and his team can defeat the Xeelee in the Galactic Core, where they build their mysterious project, which humans believe speeds up the heat death of the galaxy. Michael Poole equips three spaceships to travel to the Galactic Core and eradicate the Xeelee.

One of the spaceships in this expedition is crewed by Virtuals, who decide that they prefer to model an elaborate simulation of the life on Earth before it was moved and not to follow up on the mission of destroying the Xeelee. Michael Poole sends his Virtual – Jophiel Poole to investigate it, and eventually lets the spaceship go their own way. Despite the usual practice of getting rid of the Virtuals of the living humans after their memory is uploaded to the original human, Michael leaves Jophiel functioning.

The crew of the second spaceship, intended to supply the rest of the fleet with food, want to have children in the decades-long journey. Michael is against it and the second ship also leaves the fleet, following a signal of human life from an unknown planet. The people on the planet are the remains of one of the generation ships that Micheal send off from Earth before moving it out of the path of the Xeelee's strike. These remains lost almost all technology on the planet they landed on and have become test subjects of the Ghosts, an alien species who in the alternate timeline were subjugated by Micheal Poole and in this timeline recognized the sign of their species when they encountered humans in the Solar System. Jophiel and Nicola, one of the core members of Michael's who decided to leave

with the second ship, send a distress signal when they are apprehended and captured by the Ghosts. After attacking a Ghost, Nicola is turned into a Ghost-human symbiotic entity.

The system itself contains the Xeelee constructions on the planet the humans tried to settle on and a very unstable star where humans and ghosts find mysterious dark matter pods. After Michael with the remaining ship comes to the planet and frees his companions from the other ship, they take one of dark matter pods from the star of this solar system with them. The exploration of the pod shows that it is a life form made of dark matter, and humans understand that the Xeelee are fighting against this life form.

Reaching the Galactic Core, humans try to attack the Xeelee, and predictably fail. The Xeelee also lose in the war with photino birds, and the previous timeline ends with the Xeelee giving humans transport to the other galaxy, hoping they will restore civilization. In this timeline, the Xeelee annihilate humanity. However, the survivor of this timeline – Jophiel realizes that only through symbiosis and unity baryonic lifeforms can survive the conflict with photino birds and in the end Michael Poole, the disembodied entity of the first timeline, and Jophiel Poole unite their efforts to start a new timeline.

### ***Lexx (1997-2002)***

Lex Gigeroff, Paul O'Donovan, Micheal O'Donovan

Brunnen-G, humans from planet Brunnis-1 in the Dark Zone, win the Great Insect War, defeating the insects and saving humanity. Brunnen-G move to the Light Zone, as Brunnis-1 is about to be destroyed by the Supernova. Centuries later Brunnis-2, a planet they inhabit in the Light Zone, is attacked by the Divine Order, ruled by His Divine Shadow, who aspires to take over the Light Universe, crushing all resistance. Brunnen-G have a prophecy that Kai, their military leader, will be the one to kill His Divine Shadow and destroy the Order. However, the battle between the Divine Order's fleet and moth battle ships that Brunnen-G developed using the insect material ends in a decisive victory of the Divine Order, and Brunnis-2 is annihilated. Kai manages to break the line of defence and get to His

Divine Shadow Command point but is killed immediately. His Divine Shadow turns Kai into his Undead Assassin who spends most of the time in cryogenic sleep and is woken up by His Divine Shadow to kill the dissenting humans. Kai's body is powered by protoblood, produced by insects, he does not remember his past, has no desires or emotions, and follows the orders of His Divine Shadow unquestioningly.

A group of heretics manage to infiltrate the Cluster, the Divine Order's main planet, to steal the Lexx, the most powerful weapon of destruction that His Divine Shadow commissioned to finalize his project of subjugating all Light Zone. The Lexx is designed by Bio-Vizier, His Divine Shadow's main engineer, based on Brunned-G moth battle ships. The Lexx is fed by dismembered bodies of the people recognised as criminals in the Divine Order. The heretics manage to get to the Lexx, and His Divine Shadow activates Kai to prevent the theft of the Lexx. The heretics are joined by Zev Bellringer and Stanley Tweedle. Zev Bellringer is convicted for being disrespectful to her husband and sentenced to become a "love slave". Her body and brain are to be changed for her new role. His Divine Shadow releases a pack of cluster lizards, preying on human brains, to deal with the heretics remaining on the planet. One of the lizards tries to eat Zev in the process of her transformation. The machine transforming Zev's body kills the lizard and mixes the lizard's genes into Zev's new body. Zev wakes up in the middle of the process and replaces her head with a robot's head in the machine. The robot – 790 – gets the programming of a "love slave" and imprints on Zev. Zev flees with 790's help and joins the heretics. Stanley Tweedle is a low-grade service personnel who makes a mistake and is sentenced to donating some of his organs for transplants, while the rest of his body is to be consumed by the Lexx. He tries to escape and runs into heretics who recognise him as a traitor who shared their location with His Divine Shadow and take him along for their own trial.

Kai kills all the heretics, and the key to the Lexx is transferred to Stan by chance. Zev and Stan manage to hide in the Lexx and order him to take them away. The Lexx passes



through the Gate to the Dark Universe, which disrupts his programming to unquestioningly obey His Divine Shadow and makes Stan his sole captain. Kai finds Divine Predecessors of His Divine Shadow – preserved brains and memories of His Divine Shadow’s former bodies – on board the Lexx, while looking for Zev and Stan. His memory is restored, so when he finds them, he does not attack them, but stays with them on the Lexx, spending most of the time in his cryogenic pod because he does not have much protoblood left to function.

In the Dark Zone, the Lexx with his new crew visit Brunnis-1, which is destroyed by the supernova, and Klaagia, a garbage planet, inhabited by a brain-eating parasite, which they subsequently destroy. One of the cluster lizards released by the heretics, lay an egg on the Lexx, which later hatched into a young cluster lizard. The little cluster lizards, Squish, imprints on Kai and considers him his parent. As Kai running very low on protoblood, Zev convinces Stan to return to the Cluster and steal more. When they approach the Cluster, another revolt is taking place. His Divine Shadow’s body is killed by heretics, and the insect essence, who designed the Divine Order as a means of taking a final revenge upon humans, settles in the main heretic. Kai and Zev manage to steal protoblood, but their presence is noticed by the insect essence. The insect essence wants to activate the Gigashadow, a larvae-shaped spaceship that is even more destructive than the Lexx, by taking over its brain. Kai makes his way to the Gigashadow’s brain with Squish and lets Squish feast on it, killing Gigashadow before it is united with the insect essence. Stan picks up Zev and Kai and orders the Lexx to destroy the Cluster. The insect essence flees the Cluster’s destruction and follows the Lexx, eventually settling in Kai.

Under the influence of the insect essence, wanting to rejuvenate hibernating insect bodies, Kai organises a meeting with Mantrid, a cyborgian entity who has very few organic parts left. Mantrid is the student of Bio-Vizier, obsessed with the idea of ruling the Universe, which eventually makes him a better vessel for the insect essence than Kai. During one of the encounters with the Dark zone inhabitants, Zev dies, sacrificing her life to save Stan and

Kai. Her body is reassembled as Xev by Lyekka, a carnivorous plant, as a sign of gratitude for unintentionally feeding her with unsuspecting humans from the “Potatohoe” planet. Mantrid creates a throng of drones and pursues the Lexx to kill him with his crew. Kai outsmarts Mantrid, and thus fulfils the prophecy of killing the last of the insect species and destroying His Divine Shadow. Unfortunately, he destroys the Light Zone as well, so the Lexx and his crew look for a new home in the Dark Zone.

After three thousand years of travelling through the Dark Zone with all his crew in cryopods, the Lexx arrives in a system where two habitable planets – Fire and Water – are fighting a lethal war. Fire and Water are literalization of heaven and hell, where good souls go to Water and evil souls – to Fire, the souls have no memories of their previous lives. The ruler of Water – Prince gives Kai a promise to make him a mortal again; the whole idea of Kai undead existence is insulting to both population of Fire and Water, as afterlife is considered the biggest sin there. The Lexx destroys Fire and Prince, temporarily possessing the Lexx destroys Water. They turn out to be in the same system as Earth, where all the souls from Fire and Water reincarnate after the destruction of the planets. Xev, Kai and Stan try to settle on Earth, but the hungry Lexx eats Australia, thus undermining possible relations. A fake Lyekka comes to threaten Earth’s population, and humans on Earth try to build a ship to flee the planet. The leader of the project to build a spaceship also intends to destroy the planet when his ship leaves. Kai aims to stop the mad scientist’s doomsday device, and in the middle of his lethal mission he gets his mortality back from the reincarnated Prince and dies. Senile Lexx destroys Earth on 790’s order; 790 develops a spiteful madness and loves only Kai, shifting to him from Xev, and Kai’s death unleashes him on a killing spree. The Lexx dies, but due to his mating with a terrestrial dragonfly, his child – Little Lexx – remains in his place. Little Lexx picks up Stan and Xev fleeing the dying Lexx on a moth ship, a symbiotic species on the Lexx, used for a short space and atmospheric trips. Stan, who

becomes the captain of the new ship, as the key is still functional. Xev and Little Lexx start out on a journey to find a new home.

### ***Farscape (1999-2003)***

Rockne S. O'Bannon

John Crichton, a human astronaut and scientist, studies wormholes and when one appears in Earth's proximity, he enters it on his spacecraft. The wormhole takes him to an unknown place in the Galaxy, and exiting it he emerges at a battlefield, accidentally ramming into a spaceship and killing the pilot. The pilot is the brother of a Peacekeeper Commander Crais, and John is immediately proclaimed a wanted criminal by the Peacekeepers. John is picked up by a spaceship full of mostly anthropomorphic aliens, who inject him with translator microbes to ask him for directions, hoping that he is local and can direct them to their home planets. The spaceship is a Leviathan, a spacefaring animal, called Moya, who used to be the Peacekeepers' prison transport against her will. During the battle when Crichton manslaughters the pilot, Moya's limiting collar is damaged, which allows her to escape from captivity. The prisoners on board Moya kill their Peacekeeper prison guards and decide to go back to their planets on Moya.

Moya's crew consists of herself, her symbiotic pilot, Ka D'argo, Zotoh Zhaan, and Dominar Rygel XVI. D'Argo is an anthropomorphic alien from a species called Luxan, known for their aggressive behaviour and military proficiency. D'Argo is convicted for killing his wife, a Sebacean woman, with whom he had a son. He is wrongfully accused because of the "Luxan rage," which this species is prone to, as after it Luxans do not remember what they were doing. His wife is killed by her brother, a Peacekeeper, who could not accept the blood-mixing union she has with D'Argo and the half-blood child she has born. Zotoh Zhaan belongs to the Delvian, anthropomorphic plant species, she is a priestess, who killed her former lover and the ruler of Delvia, her home planet. She considered him a traitor, because instead of passing on the power, as the tradition required, he decided to hold

on to it and invited the Peacekeepers to Delvia, effectively turning it into a Peacekeeper colony. Rygel is Hynerian, a non-anthropomorphic alien who was arrested for corruption and embezzlement by the Peacekeepers, which he did practice being the ruler of Hyneria, his home planet.

Moya's crew initially takes Crichton for a Sebacean because he looks like one. The Sebaceans are a species who look like humans but differ in higher stamina, speed, and strength, but lower resistance to high temperatures. They were created from humans by the Eidelons, the species who had a gift for mediating interspecies peace. The Eidelons choose humans as a source species because humans were so far away from their known region of space that no other species knew them, so they were supposed to be neutral. The Eidelons created Sebacean to become their bodyguards to make the negotiating process safer for themselves, however, the Eidelons disappeared and the Peacekeepers, left alone, attempted to ensure peace with weapons and eventually turned into an imperial entity with colonial ambitions.

Moya's crew takes Crichton with them, as he is also a wanted criminal in the eyes of the Peacekeepers. Peacekeepers are pursuing Moya and send troopers to apprehend them. One of the troopers, officer Aeryn Sun, manages to catch D'Argo and Crichton, but spends too much time in their company alone, which according to the Peacekeeper's rules is considered an irreversible contamination from the close contact with other species. Being contaminated, she faces court martial if she returns to the Peacekeepers and unwillingly joins Moya's crew. Aeryn and Crichton gradually develop feelings for each other.

In Peacekeepers' captivity, Moya is impregnated with a Leviathan-gunship hybrid, and this pregnancy is activated through breaking of the protective seal. Her pregnancy and birth of Talyn increase the Peacekeepers' interest to Moya and her crew, making them send ever more troops to apprehend the fugitives. Talyn is not only born with weapons but with a capacity to directly connect with his captain through a neural interface. He prefers the captain

to be one of Peacekeepers feeling affinity with their ideology. Commander Crais through political intrigues becomes a fugitive himself and steals Talyn. Talyn recognizes him as his captain, even though initially Talyn is more interested in Aeryn, because of her Peacekeeper past and connection to Leviathans through the elements of Pilot genome. Aeryn retains some of the Pilot's traits, even after the consequences of the mad scientist's experiments, wanting to breed a multitasking gene and using Aeryn as an incubator for it, are eliminated. Talyn still wants Aeryn to join him and Crais, and Crais harbours romantic feelings for her, forming a love triangle with Aeryn and John. Due to his hybridity and conflicting ideologies imposed from the Builders and Peacekeepers, Talyn is not mentally stable and sometimes attacks without his captain's orders. Eventually, Talyn and Crais sacrifice themselves to help Moya and her crew to escape the Peacekeepers' base and prevent the Peacekeepers to get wormhole technology.

John, who used a wormhole technology to come to the Peacekeepers' territory, is the only known person who survived a wormhole passage. John is visited by a representative of the Ancients, a species who have a full knowledge of the wormhole technology and its dangers. Wormhole technology can be used not only for directed interstellar travel, but also for destruction of whole solar systems. Ancients shared all their knowledge with John, considering that partial knowledge is more dangerous, which made him a target for both the Peacekeepers and the Scarrans. Scorpius, a Sebacean-Scarran hybrid, serving the Peacekeepers, captures John and implants his mental image into John's brain to get the wormhole technology. Fighting the madness induced by Scorpius's clone in his brain and resisting both the Scarrans and Peacekeepers, John manages to keep the wormhole technology secret.

The Scarrans are an aggressive lizard-like species aspiring to take over the known Universe, through their colonial conquest and technological advances. The Scarrans experiment on other sentient species to obtain desirable features and improve their species.

Scorpius is a product of this eugenic endeavour, which the Scarrans considered weak and useless, as he cannot survive hot temperatures and Scarrans do not like cold. The Scarrans are in an ongoing conflict with the Peacekeepers, both sharing imperial ambitions and desire to get the wormhole technology.

Moya's crew flee through the Uncharted territories and find the planet that used to belong to Eidelons, the mediating species, learning the origin of the Peacekeepers and the way to sustain peace among different species through negotiation. They find the last representatives of the Eidelons and help them to revive their negotiating gift, which was lost after the original species disappeared. With their help, John shows the destructive potential of the wormhole technology both to the Peacekeepers and the Scarrans and with the help of Eidelons, convinces them that this technology must not be used. Aeryn and John marry, and Aeryn gives birth to their son, who they call after D'Argo, who died in the Peacekeeper-Scarran war.

### **“Boojum” (2008)**

Elizabeth Bear and Sarah Monette

Black Alice flees from persecution after the Venusian riots and joins a pirate crew, flying *Lavinia Whateley*, a boojum (Vinnie). Boojums look like “spiny lionfish,” and sometimes go rogue and eat their crews, so most human on board treat Vinnie with fear and suspicion; on the contrary, Black Alice considers Vinnie beautiful and vocally shows her appreciation and attempts to connect with the boojum through non-verbal communication, like eye-contact, and gestures of greeting. Vinnie's crew attack a ship and find a cargo of preserved brains in jars, which belong to the Mi-Go, an aggressive alien species. The captain wants to sell the cargo back to the Mi-Go, but the Mi-Go catching up with them board Vinnie and turn all human on board into preserved brains. Black Alice, who is sent to make repairs outside of Vinnie's body right before the attack, learns that Vinnie's movement is limited by the governor module she is meant to fix. But for the module, Vinnie would have set out to

the interstellar space. Black Alice decides to disconnect the module to let Vinnie go wherever she wants. Responding to this, Vinnie offers to eat Black Alice, thus saving her from the Mi-Go. Black Alice chooses being eaten by her favourite boojum over becoming a brain in a jar. Being eaten by Vinnie, however, does not entail Black Alice's death, she becomes a conscious part of the boojum. Vinnie goes to the interstellar space, and Black Alice goes along as a part of the boojum.

### **The Binti Series (2015-2019)**

Nnedi Okorafor

#### **Binti (2015)**

Binti, a girl from the Himba tribe, decides to break the tradition and accept the invitation from the Oomza University. The Himba of the future are the technological experts, known for their astrolabes (a cell phone analogue) and other devices, live in the desert, on the land of their ancestors and traditionally travel very little, which especially concerns women. The Oomza University is a university planet where different species come together to study. Binti is a talented mathematician, and wants to study in a galactically recognised university, which breaks both tribal rules and gender behavioural patterns of the Himba, so she leaves secretly at night.

Boarding Third Fish, a Miri-12 bioengineered spaceship capable of interstellar flight, Binti goes to the Oomza University with other future students. During the flight, Third Fish is boarded by the Meduse, a jellyfish-like species with a long-standing conflict with the Khoush, an imagined ethnical group of humans. The Meduse kill everybody aboard, except for the pilot and Binti. Binti survives because she hides in her cabin and learns that she can understand the Meduse with the help of her *edan*. Her *edan* is a piece of mysterious alien technology that Binti finds as a child not far from the Himba land. Before the Meduse attack, Binti didn't know its purpose, but carried it with her all the time as an amulet.

Binti's capacity to understand the Meduse arouses their interest, she is taken to their ship and is introduced to the leader. Binti, hearing that the Meduse took over Third Fish to enter the Oomza University, uses her harmonization gift to negotiate not only her life, but also a promise from the Meduse to try to solve the conflict without bloodshed, offering herself as a mediator. Harmonization is a gift of communicating with different species and technology, which is a hereditary art of Binti's family.

The Meduse agree to make her their representative, but only after she becomes their family through battle, and Okwu, the Meduse who found Binti and talked to her first, stings her, causing her genome to change and making her partially a Meduse. When they arrive to the Oomza University, Binti negotiates the return of the Meduse Leader's stolen sting, which is both a part of its body and its weapon. The sting is showcased in the Oomza University Museum, and the Meduse wanted it to be returned to them. As a result of Binti's efforts, the sting is returned and Okwu is admitted as a student to the Oomza University, as a sign of peaceful intent between the species of the Oomza University and the Meduse.

### ***Binti: Home (2017)***

After a year of studies in the Oomza University, Binti is still working to overcome her trauma and wants to go home for a visit. As a part of a diplomatic effort, showing friendly relation between humans and the Meduse, Okwu comes with her. They travel on Third Fish and Binti manages to establish a connection with the spaceship with the help of her transformed body. Her hair is replaced with the Meduse *okuoko* and they react in communication with Third Fish. Binti's coming to Earth accompanied by Okwu is not met with hospitality. The Khoush are still very hostile to the Meduse, and the Himba tribe condemns Binti's dissent, and a part of her family is very negative towards her. Her sister tells Binti off for leaving because her harmonization gift is a guarantee of her family's prosperity, and her studies in a university make Binti an undesirable wife, barring her from successful marriage.



Talking with her father, Binti learns that he is not from the Himba, but belongs originally to Enyi Zinariya, a tribe leading a secluded life in the desert. Binti, trying to understand her origins, goes to Enyi Zinariya, where she meets her grandmother and Mwiniy, a man whose harmonization gift allows him to talk to non-human animals. While at her grandmother's house, Binti goes through a rite of passage to join Eniy Zinariya and to use their long-distance communication system. In her dream, Binti see Eniy Zinariya's contact with aliens who gave them the way to communicate on long distances. These aliens are also authors of the *edan* that saved Binti's life during the Meduse attack.

Through the long-distance communication, Binti's father asks Binti to come back to the Himba village due to the rising tension caused by Okwu's presence. Binti and Mwiniy, providing for a safe passage for Binti in the desert, set out immediately.

***Binti: The Night Masquerade (2019)***

On the journey back to the Himba village, Binti receives the message that the hostility erupted between the Khoush and the Meduse. Binti tries her best to come sooner, but when she returns, her family home is burned with all the inhabitants. The hostility turns into a bloody conflict between the Khoush and the Meduse who arrived to support Okwu. The Himba do not want to participate in the conflict, and try to retain neutrality, even though their land has already suffered from the military actions taking place. Binti tries to convince them to interfere, but her social position of a woman and a pariah after her studies in the university, undermines her efforts. Binti still decides to go to the battlefield, where her negotiation attempts completely fail. Binti is killed in the crossfire. The conflict is stopped, but Binti is dead. Mwiniy whom Binti told about her contact with Third Fish, calls the Miri-12 and asks her to take Binti's body to the stars as it is the way she would want to be buried.

Third Fish sends her child, New Fish, to pick up Binti's body. New Fish, a newborn Miri-12 spaceship, has a very active microbiome that reassembles and revives Binti's body. Due to it, New Fish and Binti are connected and Binti cannot be far away from the spaceship.

New Fish agrees to stay with Binti while the latter is alive. Binti learns that her family survived, being hidden under the roots of the tree that served as their family home. Binti returns to the Oomza University to continue her education. From her visit to the doctor, she learns that her body has been changed significantly in her multiple connections with other species and these changes will influence her children.

### **Chapter 3**

#### **The Berserker Series (1967-2005)**

Fred Saberhagen

#### **Berserker (1967)**

Berserker is a collection of short stories united by the common theme of berserkers, alien machines attacking humanity, and a running commentary by the Carmpan, a species archiving the human resistance to the berserker onslaught. The summaries will be given to the short stories that are discussed in the dissertation.

In “Without A Thought,” Earth is under attack of a berserker fortress ship, and three one-man fighters are waiting for the reinforcements to destroy it. Del Murray uses his semi-sapient pet animal as a decoy to engage in a conversation with the berserker and invite it to play a game to buy time. The berserker, not sensing the presence of the human, admires the intelligence of the animal directed by Del and plays with it. In the meantime, the human fleet arrive and destroy the berserker.

In “Goodlife,” Hemphill, a military officer, whose family is killed by berserkers, and Maria, a passenger on a ship, attacked by a berserker, are taken hostage. On the berserker they are held captive, they meet “Goodlife,” a child created and raised by the berserker and indoctrinated by the berserker that life is evil. However, meeting Maria and Hemphill, Goodlife feels affinity to them and helps them destroy the strategic housing, the brain centre of the berserker.

“Patron of the Arts” recounts the berserker attack on a spaceship, on which an artist is travelling. The artist facing an imminent death at the hands of the proxy robot embodiments of the berserker is painting his last picture, depicting the dread of the attack. The berserker seeing the picture spares the artist’s life, stating that fear is also a weapon, and his picture contributes to the berserkers’ cause depicting the terror incurred by berserkers.

“The Stone Place” describes the berserkers’ gathering their forces from all the galaxy to fight against Karlsen, the leader of humanity who can unite all sentient species against the berserkers. The berserkers coming to the stone place merge their minds in hive-like manner to define the strategy against the human, who can defeat them. Karlsen is a leader prophesised to lead humanity to the victory against berserkers by the sage Carmpan. Karlsen is a deeply religious person, and his religious allegiance is heavily implied to be Christianity. It is also implied that Karlsen defeats the berserkers as they summon all berserkers to annihilate the united sentient life.

“Masque of the Red Shift” is a retelling of Edgar Allan Poe’s “The Masque of the Red Death,” where a berserker takes the place of the red death. Felipe Nogara, a rich aristocrat, doubts if the berserker threat is real and is reluctant to give his financial support to the cause of fighting the berserkers, focusing more on securing his political position. Karlsen pleases him to join his cause and provide support, but Nogara thinks that it gives too much political weight to Karlsen. Nogara’s flagship, a place of constant festivities, is attacked by a berserker, and all partygoers are killed. Nogara survives and renders help to Karlsen.

### **Brother Assassin (1969)**

Sirgol is a planet with a time anomaly under berserkers’ attack. The time anomaly presupposes the opportunity to travel in time and influence history (unlike the alien machines of the first instalment, berserkers in this novel intend to eradicate all life, regardless of its sapience or sentience). Sirgol is inhabited by humans who developed from the first coloniser

who lost all their technology and came through all the stages of development independently from terrestrial humans. Terrestrial humans, however, find them during the war with berserkers and warn them against the berserker threat. Consequently, when berserkers attack Sirgol, humans go underground and preserve humanity, managing to fend off consequent attack of the berserkers in the past through their own time-travelling equipment.

Berserkers learn about the time anomaly and send raid parties of berserker machines to prevent humans from developing to the level of being able to resist their attacks. They choose three turning point in the history of humanity: the invention of the flame, the formation of a centralised state with an official religion in the equivalent of the Medieval time, and the discovery of physical knowledge by a monk scholar in the equivalent of Renaissance. Humans successfully prevent the murder of the key individuals by berserkers and manage to retain the victory over the berserkers.

This novel is indicative of Saberhagen's vision of history and religion. Two out of three turning points in the human history relate to religion. The king of the Medieval kingdom chooses monotheistic religion (very similar to Christianity) to unite the warring parties and pave the way for political and scientific progress. The monastic orders are considered essential for scientific development, berserkers aiming to kill the scholar and prevent his discovery, allowing humans to move forward to technology eventually preventing berserkers' victory. They also intend to kill a monk whose image resembles that of Francis of Assisi as he can communicate with animals, taming them. His power also spreads onto berserkers, as the berserker sent to kill the monk fails to perform the act. In the monitors of human time management equipment, the berserker tamed by the monk is reflected as a newborn life.

### **Berserker Kill (1993)**

*Berserker Kill* recounts a story of an unlikely berserker which abducts an embryo bank with millions of human embryos that are intended for colonization and re-colonization

purposes.<sup>111</sup> This creates a politically charged situation as one of the embryos is a voluntarily donated embryo of the first child of Premier Dirac and Lady Genevieve.<sup>112</sup> Lady Genevieve goes missing in the act of abduction, and Premier Dirac chases the berserker to retrieve the embryo and to find his wife.

Genevieve is rescued by Nicholas Hawksmoor, an AI pilot at Dirac's service. Genevieve dies in the process, but Nicholas manages to copy her digitally. He hides her from Dirac, technically keeping her captive in the digital form and trying to win over her love. Genevieve convinces Nicholas that they need human bodies, so he secretly rigs the AI of the seed bank called Freya to produce bodies for them.

Dirac takes over the seed bank and starts negotiating with the berserker, who turns out to be a seed ship of the Builders, that same species who created berserkers, which makes it a natural enemy of the berserkers. The seed ship abducted the human embryo bank for research purposes, to know more about its unlikely allies. Discovering the true purpose of the machine, Dirac also finds Genevieve and learns about Nicholas's betrayal. Nicholas turns out to be Dirac's deceased son, a genius pilot. Dirac ordered to create a copy of his son's brain when he died and made him work for him without the memory of his past, getting on with him much better than when his son was alive.

The Builder's seed ship is sent to a faraway place in the galaxy accompanied by Nicholas, who has no other punishment for his crimes.

### **2001: A Space Odyssey (1968)**

Stanley Kubrick

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<sup>111</sup> Re-colonization implies that human population is reintroduced onto the planet after a natural disaster. This plot can be paralleled with one of McCaffrey's "The Shit Who Killed" that became a part of *The Ship Who Sang*. Helva is tasked with the transportation of embryos of suitable genetics to a planet after a natural disaster.

<sup>112</sup> It should be noted that Lady Genevieve is a woman of colour, barely of age and in arranged marriage with a white politician whose son was almost thirty at the time when the main plot unfolds. Race and gender in Saberhagen's series were not considered in detail in this dissertation, because of the space and time limits, however, they are exemplary of all the criticism that SF gets for its sexism and whiteness.

Under the influence of alien monoliths hominid apes start using tools, weaponizing a bone to kill some of the rival tribe, which triggers technological development of humanity. Millenia later, humans who entered space age discover a similar monolith on the Moon, which sends a signal to Jupiter, prompting humans to organize a space mission to find the receiving point of the signal. The mission is crewed with several astronauts, most of them in suspension and two – David Bowman and Frank Poole – awake for the mission, and HAL 9000, a high-power on-board computer. Initially HAL develops friendly relationships with the astronauts, especially David. However, it changes when a mistake is discovered, which humans blame on HAL and HAL blames on humans. The astronauts are discussing switching HAL off due to his unreliability, which HAL lip reads through his cameras. Deciding that humans are an obstacle to the mission, HAL switches off life-support system for the hibernating astronauts, thus killing them. Then on a ruse of maintenance works, he employs an EVA pod for out-of-hull works to murder Frank. He attempts to leave David in outer space, thus also eliminating him, but David uses manual controls to get on board and disconnect HAL. David reaches Jupiter and finds the third monolith there. Trying to investigate it, he experiences his whole life as a journey and then transforms into a foetus floating above Earth after touching the monolith.

### **The Culture Series (1987-2012)**

Iain M. Banks

### **Consider Phlebas (1987)**

Bora Horza Gobuchul is a spy working for the Idiran military, he is a changer, a species of modified humans who can change their appearance at will. Horza works for the Idirans not only for money, but also out of his hatred for the Culture. He hates the Culture because it is run by the Minds, superintelligent machines, which Horza sees as unnatural and threatening. Horza gets a mission from the Idirans to get the Mind, the mother ship of which was ambushed and destroyed by the Idirans. This Mind has developed a new calculation

capacity that is why its survival is crucial for the Culture, as much as its destruction is important for the Idirans. The Mind is hiding on a sacred planet which is guarded by a species preventing anybody – either the Culture or the Idirans – to get on the planet.

The Culture is a post-scarcity utopian civilization, run by the Minds, supercomputers developed by a humanoid species but self-developed to become a new species. The Minds care about the humanoid species living on the Culture territories, but also aspire to influence other sentient species and civilizations urging them to follow a less violent and aggressive path of development. This aspiration for peaceful efforts results in the conflict with the Idirans, an aggressive religiously oriented species actively expanding through colonization and conquest to other planets and systems. To stop the Idiran expansion, the Culture intervenes and gets involved into a military conflict. The Culture sends Perosteck Balveda, the agent of Special Circumstances, to retrieve the Mind. Special Circumstances is a reconnaissance division of the Contact section of the Culture, official structure responsible for contacts with other civilizations.

After many hostile encounters with each other, Horza and Balveda arrive on the planet where the Mind is hiding and must work together, attacked by the Idirans who do not trust Horza's loyalty. Horza dies in the mission barely reaching the Mind, and Balveda returns to the Culture with the Mind. The bloodshed and consequences of the Idiran War make the Culture ban its active involvement into armed conflicts.

### **The Player of Games (1988)**

Jernau Morat Gurgeh is a citizen of the Culture and the best player for the many games that the Culture populace enjoys playing. When a player who is potentially better comes along, he slips and cheats with the help of Mawhrin-Skel, a drone. Mawhrin-Skel is assumedly a drone that was created for Special Circumstances but did not make it to join the division due to unsuitable personality. The drone blackmails Gurgeh to accept the offer from Special Circumstances and help him regain "his birthright" position in the division.

Special Circumstances task Gurgeh to go to the empire of Azad and play the strategic game that they use to define who is to take over the emperor's place. The Empire of Azad is an oppressive sexist system where male and female sexes are considered inferior to the third sex – apex. The empire also executes aggressive expansive policy, and practices cruelty and different types of discrimination within its boundaries. Even though the Culture pleases not to participate in wars after the Idiran war, it still feels compelled to interfere in the cosmic politics and direct it towards the course the Minds see as more suitable.

Gurgeh eventually wins the game which causes the mass suicide of the former elites of the empire and the collapse of the empire itself. This was the aim of the Minds all along while Gurgeh was a chess piece in their “non-violent” intervention plan.

### **Excession (1996)**

A strange object appears in the space and attracts the Culture's attention; the Minds gathering for the discussion refer to this object as “excession.” The Interesting Times Gang, a group of Minds are discussing how to handle the appearance of the excession, at the same time touching upon the issue of Affront, an aggressive empire with violent and speciesist behaviour. Having resolved to peaceful means of influencing the Culture has its mission in the Affront, Byr Genar-Hofoen is the ambassador of the Culture to the Affront. However, not all the minds are happy with this situation, as the peaceful cooperation has little effect on the Affront's politics and behaviour. Several Minds conspire to trigger the Affront's offensive against the Culture, providing them with weapons from the Idiran war.

*Sleeper Service* is an eccentric vehicle who houses people who decided to stay in suspended animation until a certain event happens, most of them waiting till the Culture's transcendence. It also houses whole habitat with only animal life. His only awake passenger is Dajeil Gelian who used to be Genar-Hofoen's partner. She suspends her pregnancy after his betrayal and leads a secluded life on *Sleeper Service* with her only companion - *Sleeper Service's* avatar, called Amorphia. *Sleeper Service* is an undercover Special Circumstances



vehicle, and it is tasked with approaching the excession. Before carrying out this potentially dangerous task, it wants to resolve the problem that it feels responsible for – Dajeil’s suspended pregnancy and her relationship with Genar-Hofoen, which *Sleeper Service* encouraged accepting Genar-Hofoen’s request to join Dajeil on her appointment.

*Sleeper Service* pulls Genar-Hofoen from his mission in the Affront and organises his meeting with Dajeil, after which Dajeil decides to have her child, while Genar-Hofoen resumes his position in the Affront. The Affront’s offensive against the Culture fails, as the Minds’ conspiracy to trigger it is discovered. *Sleeper Service* transfers Amorphia and Dajeil to its daughter vessel and goes to see the excession and be destroyed by it.

### **The Linesman Series (2015-2016)**

S.K. Dunstall

#### **Linesman (2015)**

Ean Lambert is an unusual linesman who has not received standard training but is still able to work with all the known ten lines – the technology that provides for an exceptionally fast space travelling. He is a rare linesman, because there are very few ten-lines linesman, however, the lack of training makes him a pariah among linesmen; and he does not have an option to join a recognised cartel. He is employed by a low-level cartel the leader of which shamelessly makes profit out of him without paying him enough or recognizing his value. He is also considered odd among the linesman because he sings to the lines and considers them sentient and capable of communication. He has very favourable reviews from the customers, however, it does little to alleviate his unfavourable position among the linesmen.

Michelle Lyan, the princess of Lancia, is looking for a level ten linesman, however, all of them are gone to see the Confluence, a mysterious space object that appeared in the human space and has an intoxicating and addictive effect on the high-level linesmen. Michelle needs the highest-level linesman to investigate another object, also arriving in the

human space. In contrast to Confluence that is passive, except for its influence on high-level linesmen, and does not interact with other objects, the object Michelle is investigating is attacking any ships that come closer than a certain distance. The linesmen testify to the presence of lines within the attacking object. Most of the high-level linesmen are gone to see the Confluence, so Michelle buys Ean's contract from his guild and takes him to the unknown object.

The observation and exploration of the unknown object becomes a political event where alliances are forged, showing that Michelle does not support isolationist and imperial policy of her father, the Emperor of Lancia, and attempts to make alliances against Redmont, the oldest political entity of the human space. Redmont seems to be planning on taking a monopoly of speedy space travel, taking control over schedules and gates, which are the points of entrance for lineships into the normal space from the void. A collision between a lineship emerging from the void and any other object causes an explosion capable of destroying a whole solar system. Redmont also seems to be undermining the factories producing lines and production of catalysts.

The unknown object in space turns out to be an alien spaceship which escaped the alien war with all its crew dead. Ean manages to find contact with the ship, and discover an additional line – line Eleven, which also seems to be present in Confluence and causes the addiction-like connection in linesmen. Lancia and allied political entities claim the ship as their own, and the ship is eager to cooperate because the lines like to be around sentient beings. The lines increase their own sentience from the contact with other sentient species. After his success with the *Eleven*, the alien lineship, Ean is taken to the Confluence and discovers it to be an alien fleet, also escaping the alien war. A new alliance of galactic political entities is formed to resist the monopoly on space travel and line production.

### **Alliance (2016)**

Lineships form an intimate connection with their captians, so the *Eleven*, the first alien lineship, discovered by Ean, needs a captain and a crew, which becomes an alliance-wide political discussion and effort. The *Eleven's* new captain is Selma Kari Wang who witnessed the death of her previous ship and is still recovering from it. In the meantime, Ean is starting to retrain linesman, after his interaction with the lines is proven to be more successful and beneficial for human-line interaction. He discovers that singing to the lines and using the innate musical abilities of the linesman provides for a better understanding between the alien technology and humans. All linesmen prove to be musically gifted, which seems to be a condition for the ability to work with the lines. However, most linesman resist the idea of the sentient lines and are not eager to learn from Ean, who they regarded with contempt before.

The political situation grows more tense with the formation of new alliance and the disposition of forces in line production and linesmen interaction changing. When Redmont ships attack the alliance forces undercover, the *Eleven* is first tested in battle and proves to be a formidable weapon. In the conflict, Ean also tries to prevent more ships getting damaged and accidentally sings several ships to join the *Eleven* fleet, which is the property provided by line eleven, the line responsible for communication and unity among a group of ships joined together. Ean's power over the lineships and ability to communicate with them and feel them brings his humans to understanding that he might be a mysterious entity referred to as line twelve.

### **Confluence (2016)**

The further exploration of the lines allows humans to communicate with each other on cosmic distances without a lag, usually associated with such communications. One ship from a united fleet can relay messages without a lag. The more Ean's capacity to work with the lines become known, he becomes more and more wanted by other entities who try to

hunt him down and take hostage or use him to gain political weight. The Confluence fleet feels very lonely with people which makes Ean try to find crew for the alien ships, but it also provokes a lot of political scheming due to which the task of crewing so many alien ships is difficult and long.

Redmont is the first entity to understand that lines are an alien technology and approximately determine the source where the lines come from. This knowledge also makes them redouble the efforts in trying to control the lines, especially those that are not cloned lines from the *Havortian* that humans use on all their lineships. The race to control the production sites, and gates expands to include searching for and finding more alien lineships, escaping from the alien war. The alien war that is happening outside the human space remains a concern, however, little is known of the species fighting the war.

Ean continues his exploration of the lines, learning the purpose of the lines that was unknown before the start of his work, like line seven, responsible for the inter-fleet communication. He also learns that there are single-line linesmen, who can communicate with a separate line, rather than with all of them. It challenges the hierarchy among the linesmen, which before Ean's research stated that the higher the number of the lines, from one to ten, is available to a linesman the higher they rank. The mutual exploration of the lines and humans, thus, has impact not only on the relations between the lines, but shifts the hierarchical structures in the human society.

### ***Killjoys (2015-2019)***

Michelle Lovretta

The Quad is a solar system with one inhabitable dwarf planet – Qresh, and three terraformed moons – Arkyn, Leith, and Westerley. The Moons are terraformed by the Company, a corporation owning most things in the System and run by elites from Qresh. The terraforming of the moons was necessary due to the overpopulation on Qresh, threatening its environmental stability. Arkyn is a failed first attempt at terraforming and is rendered

uninhabitable. Leith is an agricultural moon with good environmental health, where middle class was resettled, while the elites remained on Qresh. Westerley is the moon with most industrial facilities and workers living on it with the Company's promise of eventual resettling to Leith after years and years of work, which is not kept.

The RAC (Reclamation Apprehension Coalition) is a neutral organisation of bounty hunters who fulfil orders regardless of who placed the order. Dutch and Johnny Jaqobis are a RAC team, who are joined by Johnny's brother D'avin, a traumatised and modified soldier fleeing from prosecution. Dutch, Yalena Yardeen, is a part of elite who was trained as an assassin; she murders her husband on her instructor's command and flees from her assigned destiny on the AI spaceship – Lucy, given to her as a wedding present. Her instructor is a part of the elite called Khlyen Kit Rit.

The conflict between the Company and the workers grows more intense with workers demanding more rights and Company trying to suppress the workers' resistance. To sustain the status quo, the Company sends genetically modified people, highly trained, almost immortal, and completely unemotional, testifying to the Company's involvement into a potentially dangerous and unethical research. Dutch, Johnny, and D'avin, allying with the workers of Westerley, set off to investigate the Company's research project, which brings them to Arkyn, where Dutch experiences memories that are not her own. They learn that the scientific research by the Company is of alien origin, and this alien source wants to take over the Quad. The elites cooperate with the aliens, having a contract with them to leave Qresh untouched by the new terraforming to suit the needs of the alien species.

Dutch learns that she is a copy of Aneela, the daughter of Khlyen, and Khlyen trained her to resist Aneela who was taken over by the green – the alien species' collective memory and cognition source. Dutch herself is created by Aneela from the green. It turns out that Aneela is actively attempting to resist the alien invasion of the Lady, working through the green. Uniting with Aneela's forces, Dutch, Johnny, D'avin, Lucy, part of the Qresh elites,

and people of Westerley resist the alien conquest. The Lady, failing to turn Westerley into the factory for production of her clones, is captured by Khlyen. Representatives of the Qresh elites, including Aneela, make a contract with workers from Westerley giving them opportunity to move to Leith.

### ***Aurora (2015)***

Kim Stanley Robinson

Due to overpopulation and environmental decay, humans sent a number of generation spaceships to other potentially inhabitable planets. Two of these ships are destined for Tau Ceti system, specifically for a moon titled Aurora, which is promising as a place for terraforming. On one of the ships, human have an armed conflict that results in the destruction of the spaceship. The second spaceship goes on to Aurora, humans on it establishing a democratic system and erasing the memory of the other spaceship and its tragic end. They also program all the printers on the ship to produce faulty weapons to prevent the armed conflict.

Devi, the head engineer of the remaining ship going to Aurora, facing the impending decay of the Ship, and knowing that she will not live long enough to reach Aurora herself, attempts to help the Ship and the humans by developing the Ship's intelligence. Starting from educating a set of environmental software to have somebody to talk to, she trains all the software of the Ship to be responsive and able to make decisions. The emotional intelligence of the Ship is also promoted by the narrative task that Devi sets to it, asking the Ship to recount the journey to Aurora. Choosing Freya, Devi's daughter as a protagonist, the Ship chronicles not only the journey, but also their own contemplation and experience.

When humans arrive on Aurora, they encounter a proto virus that is highly infectious and kills those who were on the surface of the moon before a cure can be found. Those who stayed on board immediately withdraw from the moon, and trying to leave those who went down and causing a massacre when those who come down try to board the ship. The

remaining humans are divided into several groups, some wanting to continue the terraforming mission with a different planetary body and some wanting to go back to Earth. The conflict ensues, with faulty firearms that hurt those who try to use them being produced. The Ship helps to stop the conflict acting as a sheriff and making the parties sit down for negotiation. As a result of the negotiation, the Ship is divided into two equal parts, containing all the microbiomes, plant life and animal life. One part of the Ship stays with those who want to continue the colonization mission, the other takes humans back to Earth.

The Ship stays with Freya who joins those who go back to Earth. During the trip the decay of the Ship is more prominent, the ecosystems of the Ship are failing through overuse and the decision is made for humans to spend the rest of the journey in suspended animation. As humans on Earth take too long to send the deceleration ray, the Ship manages to dispatch most of their humans to Earth, but still has too much speed and burns in the heat of the Sun, where the remainder of the speed takes them.

On Earth the environmental decay is even more prominent than when the generation ships left, and it is proven that humans cannot survive for long outside Earth, needing to return to it, showing both the effects of negligence of humanity to their planet, and futility of the colonisation mission.